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ANALYSIS OF CONTENTS

PREFACE

Peter L. Spencer, Ph.D., Professor of Education, Claremont Colleges, Director of Conference - - - - - - - - - - 7

DIVISION I: AURAL AND VISUAL READING

Dr. Sarah Apperson, Educational Psychologist John Tracy Clinic, Los Angeles, Calif.: The Effectiveness of Orthoptic Training as a Means of Remedial Instruction in Reading - - - - 13

Dr. John S. Carroll, Supt. of Schools, San Diego County; President, 1943-44, Audio-Visual Aids Association of Southern California: The Developing Program of Audio-Visual Education in California - - - - - - - - - - - - - - - 19

Mrs. Harvey Dye, Trustee, Whittier Union High School; Past President 1st District P. T. A.: A Parent Views the Hearing Problem - - - - - - - - - - - - - - - 24

Mrs. Lydia M. Kellogg, Supervisor of Dietetics and Director of Cafeterias, Pasadena City Schools: The Relation of the School Lunchroom to the School Program - - - - - - - - - 27

Miss Clare Kerr, Special Teacher in Reading, Vine St. School, Los Angeles: Binocular Coordination and School Success - - 29

Dr. George B. Mangold, Professor of Sociology, University of Southern California: Social Aspects of Defective Hearing - 44

Miss Kathryn J. Stasney, Director of Speech Correction, Alhambra City Schools: The Use of Auditory Stimulation in the Speech Program - - - - - - - - - - - - - - - 49

DIVISION II: PRIMARY READING

Lieutenant John Alman, United States Navy: Reading Problems of Technical Training in the Naval Airforce - - - - - - 59

C. Delmar Gray, District Supt., Escondido Union Elementary Schools: Supplemental Materials for Instruction Illustrated in Science - - - - - - - - - - - - - - - - 65

Margaret Regnery, Teacher, Grove School, Ontario, Calif: A Concept of Science as "Primary" Reading - - - - - - 69

Mr. Emmett C. Thompson, Assistant Professor of Education, Claremont Colleges: Building Concepts in Map Reading - - - 75

Miss Marian Telford, National Safety Council, Chicago, Illinois: Safety: A Problem in Reading - - - - - - - - - 85

173030

DIVISION III: THE PUBLISHER'S VIEW OF THE IMPLEMENTATION OF READING INSTRUCTION

Lillian A. Downey, Educational Consultant, D. C. Heath and Co., San Francisco; formerly instructor, University of Minnesota, Columbia University, and Broadoaks School, Pasadena, Calif.: Bridging the Gap into the Library - - - - - - - - 93

Mrs. Mary Lembke, Principal of Laurel School, Brea, Calif., representing Scott, Foresman Co.: A Modern Twelve-Year Reading Program for a Modern Age - - - - - - - - - - 98

Clarence R. Stone, Webster Publishing Co.: Reading Materials Needed Under an Adequate Philosophy of Reading - - - 105

DIVISION IV: THE READING OF NORMAL AND SUPERIOR CHILDREN

Mr. Mardie Jay Bakjian, Librarian, Kern Avenue Junior High School, Los Angeles: Comics and Reading - - - - - - - 117

Ruth Close, Elementary Counselor, Los Angeles City Schools: Remedial Reading from the Standpoint of the Counselor - 120

Blanche L. Garrison, Coordinator of Fundamentals, Dorsey High School, Los Angeles: The Maturing High School Reader - 128

Theresa Johnson, Elementary Counselor, Los Angeles City Schools: Materials on Science in Reading - - - - - - - - - 131

Ruth F. Staff, Adjustment Class Teacher of Remedial Reading, Melrose School, Los Angeles: How I Teach Reading to Deficient Readers - - - - - - - - - - - - - - - 137

DIVISION V: TEACHING BI-LINGUAL CHILDREN

Floyd C. Covington, Executive Director of Los Angeles Urban League: Reading the Signs of the Times - - - - - - 147

Mrs. Ruth Ginsburg, Member of Curriculum Committee on Spanish in the Elementary Schools, Los Angeles City Schools: Introducing the Teaching of Spanish in the Elementary Schools of Los Angeles - - - - - - - - - - - - - - 152

Mabel Claire Keefauver, Teacher of Spanish, Hollywood Junior High: The Teaching of Spanish in the Junior High School - - 154

Miss Elis M. Tipton, Vice-Principal, San Dimas Elementary School: Language — One Means of Improving Mexican-American Relations - - - - - - - - - - - - - - - 160

93
98
105
117
120
128
131
137
147
152
154
160

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CLAREMONT COLLEGES READING CONFERENCE

Ninth Yearbook 1944

REPORTING THE CONFERENCES

JULY 10-14, 1944

Sponsored by Claremont Colleges
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PREFACE

Peter L. Spencer, Professor of Education, Claremont Colleges, Director of the Conference

The Annual Reading Conference at Claremont Colleges held its twelfth session this year. The first years' programs were not recorded. Nine years ago there was initiated a series of yearbooks for the purpose of reporting the papers and discussions presented before the conferences. These yearbooks have found favor among educators. They have been listed repeatedly in selective bibliographies concerning reading.

The Claremont Conferences have consistently developed a broad conception of the nature of the reading process. Reading is conceived as being the process by which persons adapt their responses with regard for any and every type of stimulus situation. The characteristics of the process will be affected by the stimuli as sensed. For example, printed words may be sensed either visually or tactually. Spoken words are intended for aural reception, but many people read them visually or not at all.

Conferences concerning reading have become numerous. However, for the most part their programs treat of only a limited portion of the field as it is conceived at the Claremont Conferences. The customary treatment is to consider only the visual reading of printed word symbols. Usually attention is centered upon a narrow coverage of that limited aspect of the field. Consequently, the programs of the Claremont Conferences stress more thoroughly other phases of reading development. The divisions of the ninth yearbook bring out this point.

The first division treats of aural reading and visual reading. Aural reading refers to behavior adapted with regard for sound stimuli. Visual reading refers similarly to behavior adapted with regard for sight. Dr. Apperson's report of a study of the effectiveness of certain orthoptic practices for the development of more efficient reading of printed word symbols suggests a potentially fruitful but largely untried approach to so-called "remedial reading."

Dr. Carroll's discussion of audio-visual education emphasizes possibilities of different types of implementation materials which offer rich opportunities not available when the instructional program is centered exclusively upon printed textbooks.

Certain aspects of aural and visual reading are brought out by Mrs. Dye's presentation, "A Parent Views the Hearing Problem." Visual speech reading is recommended to supplement aural speech reading for those who have suffered an aural impairment.

School instruction programs are likely to be planned in terms of subjects for study. Mrs. Kellogg's brief statement of the "Relation of the School Lunchroom to the School Program" offers food for thought. Reading, whatever form it may take, requires energy and food is the source from which the energy must come.

Seeing is a native ability but efficient seeing must be learned. Miss

Kerr's excellent discussion of "Binocular Coordination and School Success" clearly illustrates the danger of our assuming that good seeing is always present if the pupil is not blind. "Visual education" as she thinks of it consists of a fuller development of visual abilities. The fact that her discussion is based upon classroom experiences makes it doubly valuable and suggestive. Dr. Mangold indicates that persons with impaired hearing must learn to read their conditions effectively. He points out even more pertinently that there is a great need for our society to develop abilities to read its deaf and impaired hearing members. This is truly a neglected phase of the reading program.

The division on aural and visual reading closes with Mrs. Stasney's stimulating account of "The Use of Auditory Stimulation in the Speech Program." Her reports of teaching pupils having severe aural reading handicaps will prove interesting to everyone. The use of amplification of speech sounds will suggest many possibilities to thoughtful teachers.

The second division is devoted to the discussion of what we at Claremont Colleges call "primary reading." This needs to be distinguished from the reading of printed words at the primary grade level. It refers to "reading things" rather than to "reading symbols of things." It is primary in the sense that reading things and relationships among things customarily precedes or is primary to the reading of symbols which stand for but are not the things themselves.

Lt. Alman, formerly head of the Mathematics Department of Lincoln School, Teachers College, Columbia University, indicates that the armed forces have contributed much toward the developing of a good reading program. His discussion of "Reading Problems in Technical Training in the Navy Airforce" has pertinent implications for a much broader application. The values and limitations of "G. I. training" can best be determined by qualified educators who are actively participating in that work.

Superintendent Gray's account of the man who failed to impress horses because he had no "horse sense" has pertinency for educators. There is much that is worth considering in his story of the use of "Supplemental Materials for Instruction: Illustrated in Science." The reading of things gives content for projection to the reading of symbols.

Miss Regnery's discussion of "A Concept of Science as 'Primary' Reading" is an excellent critique of many current conceptions of science and of reading. Her suggestion that true science behavior ("sciencing") is actually a high type of reading should help in devcloping better curriculums for the schools.

"Safety: A Problem in Reading," as presented by Miss Telford from the staff of the National Safety Council introduces another problem for the teacher of reading. She states, "individuals are involved in accidents because of bad attitudes, lack of information and skill, unfortunate environment or the careless acts of others over whom they have no control." These are problems of reading. A checklist for self survey is included which will give the readers an opportunity to measure themselves.

A much neglected phase of reading instruction is that of teaching people how to read maps effectively. Professor Thompson's dissertation on the basic ideas upon which maps are constructed will prove helpful. His illustration of the problem of locating a small spot on an otherwise spotless ball is certainly an illustration of a problem in "primary reading."

Division three reports the discussions of the points of view from which the editorial staffs and writers of publishing companies approach the implementation of reading instruction. The idea was to determine the nature of their conceptions of the reading process and to see what they would add to the customary school program for instruction with reading.

Mrs. Downey chose the topic, "Bridging the Gap into the Library." She discusses the general features of the D. C. Heath and Company's "Reading for Interest" Series. How the publisher uses the schools as a laboratory to develop and validate ideas concerning a functional reading program is clearly presented by Mrs. Lembke's description of the development of Scott-Foresman's materials for "A Modern Twelve-Year Reading Program for a Modern Age." Mr. Stone's discussion of "Reading Materials Needed Under an Adequate Philosophy of Reading," first presents an excellent resume of psychological concepts and problems concerning printed word reading. He then describes the way in which the Webster Publishing Company's materials have been constructed to implement the reading instruction program.

Division four is composed of materials for which the Southern Section of the Reading Committee of the Secondary Principals' Association is largely responsible. This group has collaborated with the sponsoring bodies of the Claremont Conferences for the past several years. Their consideration of the "Reading of Normal and Superior Children" is timely and worthwhile.

Mr. Bakjian made many friends with his discussion of "Comics and Reading." More than one conferer expressed a wish for such a librarian for his school. The challenge to conquer the young reader's world by invasion through his weakest sector, the comics, will bear thought.

How a counselor reads those who are referred to her is well described in "Remedial Reading from the Standpoint of the Counselor," by Ruth Close. She points out that teachers and school administrators are badly in need of "remedial training" in order that they may more effectively read the needs of their pupils.

Mrs. Garrison is a "repeater" on the Claremont Conference program. She never fails to suggest some good ideas and practices. Her consideration of "The Maturing High School Reader," is no exception to that reputation. She insists that "reading cannot be a technique apart from other language skills."

Miss Johnson's treatment of "Materials on Science in Reading," suggests many types of reading activities. Reading things can readily be accomplished by children when they may not be able to read abstract symbols. As the author suggests much good may come from "using our daily science experiences as reading material."

"How I Teach Reading to Deficient Readers" is interestingly discussed by Miss Staff. The need for reading the pupil while teaching him to read is clearly illustrated.

The fifth division contains materials pertaining to "Teaching Bi-lingual Children" to read. Mr. Covington's "Reading the Signs of the Times," gives the reader the impression that we are all multilingual and all afflicted with many serious misconceptions. The African-American child meets a serious problem when he must secure his school experiences through the use of a foreign language.

How a large city is attempting through its schools to develop a functional bi-lingualism is reported by Mrs. Ruth Ginsburg. She presents some

aspects of the plans for "Introducing the Teaching of Spanish in the Elementary Schools of Los Angeles."

"The Teaching of Spanish in the Junior High School," seems like a jolly experience as Miss Keefauver recounts it. She describes a process for language teaching and learning that many will wish they might have experienced. Learning Spanish in order to know Spanish speaking people and to have the thrill of a new language medium is a long way from the old grammar grind that many will remember.

Beyond question, "Language: One Means of Improving Mexican-American Relations," has merit worthy of consideration. Miss Tipton points out quite pertinently that "we are usually down on the things we are not up on," as someone has expressed it. The ability to communicate freely and with facility is a basic preventative for misunderstanding. Children who live in bi-lingual communities often have social difficulties which seriously handicap them in personality and as students. The account of Pablo and his brother as they met differing educational opportunities will be helpful to everyone.

Claremont Colleges has been privileged to conduct programs of study to attempt to develop more efficient teaching of Spanish as a second language for this region. The Reading Conference section devoted to this consideration was a part of that offering.

Many devoted Pi Lambda Thetans and others have given unstintingly of their time and energy to make these Conferences and resulting Yearbooks as functional as possible. While it is not possible to name each one and make a direct acknowledgment for her contribution, by general agreement the sponsoring groups do wish to express their genuine appreciation for the untiring and ingenious efforts of the Conference Chairman, Mrs. Juanita Taylor.

Alpha Iota Chapter of Pi Lambda Theta sponsors this Conference and Yearbook jointly with Claremont Colleges. It is hoped that a contribution has been made toward producing better readers. The Yearbook for 1944 is submitted for your approval. Many of those who wrote the articles are actively engaged in practicing the broad view of reading which the Yearbook and Conference espouse.

Division I

Aural and Visual Reading

"A message that must travel over an impaired road is not only apt to lose much of its potency but is likely to reach its destination in such an indistinct form that interpretation by the brain is problematic . . . ."

Winifred Hathaway—"Lighting the Lamps of Learning"
Progressive Education, January 1937

THE EFFECTIVENESS OF ORTHOPTIC TRAINING AS A MEANS OF REMEDIAL INSTRUCTION IN READING

Dr. Sarah V. Apperson, Educational Psychologist,
John Tracy Clinic, Los Angeles

The research study here reported was made in the field of reading printed word symbols. The study was made with students at the University of Nebraska, who obtained results below normal on the battery of reading tests administered there. It was made to determine whether correcting visual habits would alleviate difficulties in the process of interpreting printed word symbols.

We are agreed that along with our own highly developed social, economic, and political life has come a rapid increase in the amount of print for daily reading. For example, the number of publications going into the average home has increased about one hundred and seventy percent in the past forty years. The private secretary or stenographer in the daily routine of the average office must read five hundred per cent more material than was required in 1900. In our schools, from kindergarten through the university, the curriculum has undergone a radical change and enrichment in step with all of these new economic and social needs. Reading is recognized as a set of highly specialized skills basic to success in this expanded social order and curriculum.

The average school pupil today is required to read about fifteen times as much material as the student of forty years ago. The college student's reading load has increased five times. Since the social, economic, and industrial reading load of the average adult has also increased many times, it is necessary to read as efficiently as possible. Facility in reading now has become not only a desirable quality but one that is essential to success, social adjustment, and happiness. Reading as a fundamental skill should be mastered in the elementary grades. "Learning to read is the aim for grades one to three. Reading to learn is the objective of the upper grades." High school and college reading is often unsatisfactory because the children while in the primary grades have failed to learn how to read.

Realizing the immensity and the seriousness of the problem and multiplicity of psychological, neurological, and physiological factors that enter into the functional process of reading, educators are constantly conducting researches on causes and treatment of reading disabilities. These investigations have largely followed two avenues of approach. The first and oldest we shall call the *Educational Approach.* Here the investigator has tested and measured the literary background, the vocabulary background, or the experience background of the child. The reading ability, as measured by standardized test, is then correlated with literary and experimental factors in an endeavor to find the underlying causes of reading disability.

The second avenue of research has been that of the pattern of eye move-

ments and their relation to reading. We shall call this the *Eye-Movement Approach.* The investigators have accumulated a vast store of information concerning the mechanical performance of the eyes in reading. They have investigated the number of fixations, the length of the fixational pauses, the number of regressions, the eye span, and the return sweep. These are in turn correlated with reading efficiency as measured by speed and comprehension. There is a great deal of controversy in this field. Some scientists maintain that increasing efficiency of the eye-motor habits increases reading facility. They say that when the motor habits are bad they actually inhibit the functions of the central processes. Those opposed to this theory feel that the oculo-motor habits merely reflect the performance of the cerebral processes, that they are more symptomatic than causative. There is considerable overlapping between these two groups.

The first avenue of research has not given rise to entirely conclusive evidence. The educative method, including building up vocabulary and experience background, seems to have left some students inefficient as readers.

The eye-movement group, too, has found serious problems on its hands even after developing a certain amount of desirable motor habits. This group has conceded the necessity of scholastic aid in building up high comprehension and speed. Both groups lay some claim to the need of motivation, proper emotional responses, attitude, intelligence, and good health.

This study undertook to approach the subject from a third and little-explored avenue, that of training the visual mechanism so that it develops efficient eye motor behavior which will result in the eyes performing the act of reading in a comfortable manner with speed, accuracy, and comprehension. We shall call this the *Orthoptic Approach.* The attempt was made to develop efficient eye mechanism habits to overcome those factors which might be inhibiting to correct binocular vision. In this method, actual reading of printed word symbols was at no time introduced in the training. Reading results were judged by means of standardized tests and ophthalmograph records.

All who make a study of reading realize that without a check on comprehension, oral reading may degenerate into word pronunciation and other formalities not related to reading with understanding.

Any study of eye movements should include three factors: viz., visual acuity, sharpness of focus, and eye co-ordination. The mechanical process of reading takes place by means of the eyes, but in the past we have not discriminated between physical and educative view points. It has been felt that everyone could learn to read, providing they were of reasonable intelligence and if they were drilled sufficiently. Now we know visual acuity is a requisite to the sustained reading of the printed symbols.

The study of fixations, regressions, and eye span was made in an attempt to understand the reading process behind the educative phase of training. When a sensory defect is found, the student should secure treatment from a specialist, for reading cannot reach its maximum efficiency until such defect is corrected. The physical structure of the visual organs must be reasonably free from defects, the physiological functioning of the retina must be normal, muscular coordination must be precise, and the psychological or interpretative process must be accurate, discriminating, and free from

disturbances. Improper binocular eye functioning, no doubt, is a vital factor in the underlying causes of eye suppression which is more often found among those students failing in school than among those carrying the load successfully.

Reading disabilities are in part due to intellectual limitations, and limitations in functions of the visual mechanism. No single factor has been isolated as the cause of reading failures.

In setting up the research various instruments were chosen by which the students were selected for the experiments, and later trained. The two machines for selecting them were the Ophthalmograph and the Telebinocular. The paper tests used for selective purposes were:

Henman-Nelson Test of Mental Ability for College Students
Ohio State University Psychological Test
Chapman-Cook Speed of Reading Test
Minnesota Speed of Reading Test
Carnegie Mental Ability Test
Bell Adjustment Inventory
Pressey General Reading Test

The Ophthalmograph is a compact camera which photographs the eye movements while the subject is reading. Lights projected upon the cornea of the eyes are reflected onto a film and as the eyes move across the printed page the reflections are recorded diagonally across the film. These photographs of the eye movements while performing the act of reading, give a continuous record of coordinate functioning of the two eyes, number and duration of fixations, number of regressions and return sweep of the eye from right to left.

The Keystone Ophthalmic Telebinocular is designed for binocular tests of visual functions. This machine separates the two fields of vision and allows each eye to see only its half of the slide. Through the process of fusion, the two images are combined into one image. With normal muscular balance, the visual areas of the eyes are parallel, or nearly so, for distance seeing. Some eyes have a tendency to deviate outward, others to deviate inward. The amount of eye muscle in balance which a subject can overcome is an individual matter. Many cases can compensate through the desire for binocular vision, for high degrees of inbalance, others experience double vision or suspend the vision in one eye. It is not so much the degree of defect as the counterpoise of the individual in compensating for the defect, that determines the amount of distress that is caused.

Ophthalmograph records were made of the eye movements of some three hundred university students. From these records were determined words per minute, fixations, regressions, and comprehension. All subjects were given the Iowa Silent Reading Test, Ohio Psychological Test, and the Bell Adjustment Inventory. The entire section was divided into three groups—poor, average, and superior readers. Sixty students were chosen from the lower groups. These students were matched individually with those remaining in the whole section. The control group was slightly superior in all three tests.

The approximate eye movement standards as shown by the Ophthalmograph are as follows:

	Grade 6	*Grade 7*	*High School*	*College*
Fixations per 100 words	97	95	93	80
Regression per 100 words	20	19	17	10
Number words read per minute	216	230	260-300	320-350

The orthoptic training instruments were chosen from the many that optometrists use in their profession. In making the selection several important considerations were kept in mind such as visual acuity and inefficient or defective fixation ability. A second factor is poor projection sense, which is a visual condition in which the eyes do not arrive at an accurate fixation at the beginning of the line. A third factor is a narrow zone of recognition. The instruments were chosen with the hope of training the eyes to function at the peak of their efficiency.

The instruments were of three types: rotational, convergent-divergent synchronizers, and a stereoscope which stimulated binocular vision.

Rotational-type exercises were administered by use of the Squint Korrector, stereoscopic training with the Helmholz Stereoscope, and the combination instrument was the Binocular Synchronizer. This is a stereoscope with two five-inch rotating discs, one visible to each eye. The instrument has adjustable center mirrors to permit the image of the one disc to be superimposed upon the other. On the face of each disc colored lines are drawn to stimulate peripheral areas of vision. Suitable slots are cut in the face of the discs in which the fixation targets may be placed in different positions. The instrument is operated by a variable, reversible electric motor. In actual use, the subject is required to follow the fixation target as the discs move in a rotational direction, clockwise for a suitable number of times. This is done in order to establish smooth extra-ocular muscular movements in all directions. The fixation targets are placed in such a manner as to require the subject to use both eyes if the complete target is to be seen. This placement helped to eliminate suppression.

The Squint Korrector has one disc which is twenty-four inches in diameter with the background painted light slate color. On its surface are painted radiating lines of yellow, ultra-marine, blue, and red. This wheel is rotated by a motor. Through the use of this machine it was expected to stimulate the peripheral areas of vision through the radiating lines on the disc. It caused the eyes to move in an arc which stimulated and relaxed the muscles and trained for exact fixation.

The last instrument used in training was the Helmholz Stereoscope. This was essentially a pair of plus lenses of sufficient strength to neutralize the distance between the eyes and the fixation target, combined with a pair of mirrors before each eye, set in such a position as to enable the subject to fuse the two targets into one.

The targets were reading material with control marks of one color for the right eye and another for the left eye. The subject fixes his eyes on the red color which requires the exercise of positive accommodation, and then on the blue requiring negative accommodation. This procedure serves to establish reciprocal innervations to the intra-ocular muscles and also trains for binocular single vision. The light within the instrument flashed on and off served to establish accurate and rapid fixations.

The usual remedial reading procedures were followed with the control groups. The Manual of Reading Exercises for Freshmen, by L. C. Pressey, was used.

The theory of orthoptic training is that an improvement in the mechanical aspect of eye movements will result in improvement in reading rate and comprehension.

Routine training procedure consisted of fifteen minute exercises upon each machine. Each subject received training upon all of the instruments during each period, rotating the order of the use of the instruments daily. Section A received training daily for forty-five minutes for six weeks. Sections B and C received training for forty-five minutes three times weekly for six weeks.

The control groups received training in reading in the laboratory during six week periods. This consisted of vocabulary training, reading to select the central thought, outlining, paragraphing, and an attempt was made to build up reading background.

After the first year's work was completed the statistical data pointed to the following conclusions:

1. Orthoptic training, without formal educative training, resulted in gains in speed and comprehension in reading as measured by the tests employed in this research. These gains seemed to equal if not slightly surpass the gains made by the educatively trained group.

2. With orthoptic training gains made by volunteer groups were greater and of more significance than those made by students who required training.

3. Orthoptic training resulted in slight gains, not only with selected poor readers, but with a random selection of students. The latter group seemed to show slightly more improvement.

4. Intelligence appeared to be an important factor in improvement of reading ability. The groups whose high scholastic aptitudes were superior to their initial reading ability, improved more, as a rule than did those of low scholastic aptitude.

5. With those groups of students of high scholastic aptitude, orthoptic training, as measured by the tests employed in this research, resulted in the most improvement in speed of reading, in completeness of comprehension and in the movement of the eyes' mechanical habits such as fixations, regressions, and return sweep.

A year after formal training had ceased, 29 individuals of the experimental and 20 of the control groups reported for retesting. Their volunteering for this follow-up study probably shows that they were among the more interested students of the experiment. They were given the Iowa Silent Reading Test (Advanced), Form B, and the Chapman-Cook Speed of Reading Test, Form B, and new ophthalmograph records were made.

Comparison of tests given a year after training with tests given before training showed some residual gains for both experimental and control groups.

A year later improvement in eye movements, shown by fixations and regressions as indicated by the ophthalmograph, was partially lost but still superior to the initial records of the experimental group. The control group showed fewer fixations but their number of regressions were again comparable to those shown on their initial records.

In grouping the data, individual differences appeared to be concealed. Often the standard deviation was reduced while the means of the group remained unchanged. This would indicate that the differences were lost in the massing of these data.

Individual data on a few students who manifested deviations of reading behavior are presented.

Case A's ophthalmograph rate of reading increased greatly during training at no sacrifice of comprehension. Fixations and regressions also improved. A year later her reading rate was still ahead of her initial score. Her comprehension score remained the same.

Case B, reading at high school level, increased his speed and comprehension. His fixations and regressions improved. A year later he had lost his rate. However, he was still ahead of his initial score but his comprehension was lower.

A and B were of superior scholastic aptitude, as measured by the Ohio State University Psychological Test.

Case C, of average scholastic aptitude, made a good gain in rate of reading and a small gain in comprehension, with improved fixations and regressions. She lost part of her gain the next year; however, she maintained her comprehension.

Case D, of very low scholastic aptitude, made a good gain in reading rate and comprehension during training; however, she lost in rate and in fixations the next year. Her improved comprehension was retained with additional improvements in regressions.

Case E, of low scholastic aptitude, gained in reading rate and comprehension during training. At the end of the year she had returned to her initial rate. However, she had lost 30 points in comprehension. Fixations and regressions were better than on the initial test.

Case F, a student of low scholastic aptitude, gained in rate of reading and lost in comprehension during training. A year later she had lost part of the rate gain. However, she had improved in comprehension.

Case G, of average scholastic aptitude, made no gain in rate of reading during training; however, she gained in comprehension. A year later she gained in rate but had lost part of the comprehension gained during training. Her fixations and regressions continued to improve.

Case H, of low scholastic aptitude, made no gain in rate of reading during the training but gained in comprehension. Fixations and regressions increased on the retests.

Case J, of above-average scholastic aptitude, showed a decided loss during training in rate of reading and comprehension. The next year she regained her loss in both. Fixations and regressions also improved slightly.

Case K, of low scholastic aptitude, lost in both rate and comprehension. The next year he regained in rate of reading and lost in comprehension. Regressions decreased slightly during training but a year later both fixations and regressions continued to increase in number.

Data of these special cases furnish these conclusions:

1. Improvement in reading rate and comprehension depends upon many individual contributing factors. Motivation and emotion appear to play an important part.

2. Gains in comprehension and rate made by the experimental group during the training period were not fully maintained a year later. However

in seven cases the increase retained exceeded the initial score. Members of the control group lost a part of their gain in rate and comprehension. However, the maintained increase exceeded the initial score.

3. Students with high scholastic aptitude in both experimental and control groups showed greater gains in rate and comprehension than those of low scholastic aptitude.

4. Self-interest, which continues to work for improvement, appeared present in only three cases.

Up to the present there is no answer how to fit this training into the present school program. There is an ever increasing interest in training teachers for this work, but much more research must be done before a definite program can be set up for the public schools. However, a start has been made toward the development of a useful procedure in the alleviation of reading difficulties; that is the development of visual efficiency for the reading of printed symbols.

THE DEVELOPING PROGRAM OF AUDIO-VISUAL EDUCATION IN CALIFORNIA

Dr. John S. Carroll, Superintendent of Schools, San Diego County, President, 1943-44, Audio-Visual Aids Association of Southern California

Early Developments: The history of visual education in California closely parallels the history of visual education in the United States. Increasing and yet varying emphasis has been placed upon the several aspects of visual education, including field trips, objects, specimens and models, projected still pictures, projected motion pictures, charts, maps and graphs, and similar realia in the concrete-abstract scale of scientific aids to learning.

Always of interest because of its dramatic and mechanical appeal is the motion-picture phase of visual education. Early developments in the use of motion pictures in the California schools, even as in other portions of the United States, found inadequate projection booths, equipped with 35 mm. arc projectors, using the 35 mm. inflammable film. Understandably, the popularity of this type of film, even aside from its doubtful merit at the time of the nineteen hundred ten and nineteen hundred twenty decades, was of a modest character. Spasmodic developments of more or less adequate 16 mm. sound projection equipment and 16 mm. silent projection equipment and 16 mm. silent film occupied more than passing interest in the tens and twenties; and notable examples of competitive, destructive competition on the part of producers of both equipment and films saw the 16 mm. silent films become at least a familiar teaching aid in the public

schools. Along with this development, as best recorded, incidentally, for posterity in the rare complete files of the "Educational Screen," was the term "visual education" which seemed to mean all things to all people but particularly connoting the 16 mm. silent films.

Visual Education: The term "visual education" has boundless semantic possibilities; and more than one local, state, and national program of visual education has been split upon the issue of what is meant by visual education. One of the more popular variants of this term has been "visual aids." It was practically a certainty that whenever two people interested in the field of visual education gathered together, a discussion would ensue relative to the name of the new committee that they would form on "visual education" or "visual aids."

This battle of definition has been going on for at least the past twenty years with doubtful benefit to either of the contenders in the discussion. With the coming of the war and the extensive use by the Army and Navy of the scientific aids to learning, particularly the 16 mm. sound film and projector, there has simultaneously come a tremendous boost for the term "visual education" because of the fact that the direct men of military life severed the Gordian knot-like discussion and published generous and fine materials in the general area, labeling them "visual education." Likewise, over the entrance to their respective offices and extensive departments they have placed the sign, Visual Education Department, or Division. The result has been, so far as hundreds of thousands of people are concerned, a real sales job on the term "visual education," and whether or not you or I may agree with this terminology, it is the one most generally used and understood.

As I will discuss later, there is a tremendous momentum, a real advertising advantage, to be derived from the use made of visual education as a term and as an expediting of our educational methodology. As far as I can determine, the argument is over, and the crest of the wave labeled "visual education" is carrying all of us forward. Surely, this is not the time to wrangle our way through the intricacies of semantics when more practical advantages of a timely nature are all about us.

Special California Committees: An inevitable phenomenon accompanying any phase of education is the formation of committees. California has added to the grand total in this respect and has had some very effective committees working in the general field of what, from this point on, we shall refer to consistently as visual education or audio-visual education. One of the earlier of the committees functioning in the early nineteen hundred thirties was the California Committee on Visual Education, headed by Dr. Aubrey A. Douglass and having for its purpose the determination of the place of audio-visual aids in the emerging California curriculum. As a classroom teacher appointed to this committee by Dr. Douglass, I had and continue to have a keen feeling of appreciation for the leadership which he gave to us at that time in the audio-visual field.

Other committees were formed, including, among the extensive list, special committees of the California Teachers Association, the Association of California School Supervisors, the Association of California Elementary School Principals, the Association of California Secondary School Principals, the Association of California County School Superintendents, the Association of California Public School Superintendents, the Audio-Visual Aids Association of Southern California, and the Audio-Visual Aids Association

of Northern California. Other professional groups of a state-wide and local nature named special committees, and the work accomplished by each had its effect in the total program.

Division of Audio-Visual Education: The current end product of the work done by the special committees on audio-visual education mentioned above is the new division in the State Department of Education known as the Division of Audio-Visual Education. The creation of this Division of Audio-Visual Education was a goal worked toward by many people in California interested in the developing program of audio-visual education, and it was with keen satisfaction that these people carried through to successful completion the establishment of the Division as recommended by Dr. Walter F. Dexter, State Superintendent of Public Instruction, and as approved by the California State Board of Education.

Potentialities for services emanating from this division are almost beyond the limits of imagination. The great State of California is rich in sources of audio-visual character; and with the state agency coordinating the organization, acquisition and utilization of these audio-visual sources will undoubtedly add to the effectiveness of the California program of education.

Financial Support: One of the initial problems that will have to be met insofar as this new Division of Audio-Visual Education is concerned is that of having an adequate amount of money provided in the budget for the initiation, maintenance, operation, and necessary expansion, including field services by this Division. There is a growing sentiment among the school people of the state and among the lay public interested in the welfare of education in California that the State Department of Education be more generously financed, that certain salary schedules in the State Department of Education be made comparable to salary schedules in other important departments of state government, and finally that the number of personnel operating through the several divisions of the State Department of Education be sufficient to provide adequate service to the state as a whole.

Of course, the justification for this immediate increase in the expenditure of state monies is the increased efficiency of the learning process, particularly as achieved through the use of the scientific aids to learning. Objective studies carried out under the sponsorship of great universities throughout the nation, foundation funds such as the Commonwealth Foundation, and the American Council on Education, show positive gains in efficiency of from twelve to forty-eight per cent insofar as educational processes carried on with scientific aids to learning are concerned. Certainly these dramatic justifications would seem more than sufficient to justify the adequate support of our new Division of the State Department of Education.

Possible State-wide Services: The developing program of Audio-Visual Education in California will depend, in a large part, upon the personnel selected to head up the new division. Thus the chief of the division, one or more assistant chiefs of the division, and the other staff members would have to be people well-versed in audio-visual education work and also people capable of exerting the necessary leadership that would be needed particularly in the initial phases of the state-wide program. It is entirely conceivable that in state office buildings located, for example, in San Diego, Los Angeles, and Sacramento, there would be a representative of this division; and similarly there would be such correlative services as would emanate

through the coordinating work done by this division in collaboration with all other divisions of the State Department of Education working in turn through the personnel of the other divisions. Thus the developing program of elementary and secondary education would have as integral parts thereof adequate provisions for the audio-visual aspects of the programs in question.

Another phase of the service that would well be put into effect is that of bringing to bear upon this total program in the state the attention and subsequent support of all of the professional organizations originally interested in achieving this division service to education in California. This time, however, the committees which have labored so valiantly and so well over a period of years to achieve this particular goal would be working more directly with things of a tangible nature. These committees would be able to put into effect in their own local districts the collective knowledge brought together for their benefit by the State Division of Audio-Visual Education.

Frequency Modulation in California Education: A logical and related part of the audio-visual education program in California would be the program of radio education in California with particular emphasis upon the new frequency modulation broadcasting bands which have been assigned to education use. Leadership is needed in respect to this phase of education in California by the new division in answering such problems as how to go about applying for local, district, or county broadcast station licenses operating on one of the educatio : frequency modulation bands. There is a wealth of material of an advisory character telling how to go about this, but this material grows by the minute and is already one of the justly termed "fugitive" types of material.

Growing out of the frequency modulation program would be the problem of establishing local networks between one station and another, between one district and another, and also between one county and another. Added to this would be the splendid possibility of having numbers of these local or regional stations and networks tied into a state network, the state network, in turn, being administered by the Division of Audio-Visual Education.

There is no reason to doubt that as time goes on, national hook-ups could be arranged which would come through the state and local systems down to the individual classrooms which would be of a character far surpassing anything that we have as yet seen in the field of radio education. The imagination is indeed challenged by these possibilities. It is up to all of us in the field of education who are interested in technological developments that will increase the effectiveness of our educational work to see that the optimum degree of development is achieved by such media as frequency modulation.

Almost a topic in itself is the item of transcriptions, familiar to us now in the thirty-three and a third revolutions per minute of the sixteeen inch platter used in commercial broadcasting work and to some degree in educational work as they have been developed for that specialized use. Undoubtedly these types of transcriptions will be continued and perfected even beyond the stage which they have now reached. In addition to these, however, will come the highly dramatic probability of sound recorded on fine wire. One of the major manufacturing concerns has already announced that literally thousands of units of a portable wire recorder with

a frequency range from thirty vibrations per second to over five thousand vibrations per second are in use by our military forces. A single, small spool of fine wire holds over seventy minutes of recordings which can be erased magnetically or preserved indefinitely. Picture the transcription library possibilities with such a frequency range and with frequency modulation radio to bring those recordings, undistorted, into the individual classroom. Symphonies will have new meanings, words will have new richness and the vitalizing of the learning process will achieve new heights.

The Effect of Military Education: Variously eulogized in the public press and in the periodicals and warmly debated among the professional educators is that strongly existent phenomenon called "G. I. Education." One realistic definition of what takes place in military education is that here at long last the forward-looking people in the field of education, upon being inducted into military service, have found an opportunity to put into operation without undue handicap of a limited budget the teaching methods and the equipment supplementing those teaching methods which they have known all along to be most effective. The result has been as any trained educator could easily have predicted. Those in the training courses have learned better, have learned faster, and retained more than they would have been able to do without the scientific aids brought so completely to help them during their training period.

Great commercial producers of motion-picture films have been taken in via a variant of Selective Service and have devoted the major portion of their time on a cost, non-profit basis to the production of sound motion-picture films in color; and those films have been prescribed by the people in charge of the education program of the military services. Thus, for example, the famous Disney technique which has made of that concern an organization unique among the commercial film producers, has been turned to the use of the military for their educational purposes. The results, insofar as we are permitted to know them, have made the eyes of civilian educators turn green with envy. In the hearts of all has sprung high the hope that these extraordinary developments in the field of audio-visual education would be made available to the public schools as soon as doing so would not impede the war program. The tide is now at its beginning. When the war is won and demobilization is upon us, there will come the demobilization of the training equipment and material that has done such magnificent work. It is up to all of us in education to see that the necessary attention is given to the distribution of these items of equipment and material, so that the public schools of the nation may benefit by having what could be one endowment of the war working effectively in the classroom. As it has been very aptly expressed on a number of occasions, "Why should the citizens who have paid once through their tax money for these projection machines and for these training films have to pay again, in the event that it were decided to redistribute these items through certain commercial channels?"

The forward-looking representatives of the commercial agencies, in turn, have indicated that they would welcome the immediate and direct distribution of such equipment and materials, because it would create a demand on the part of the educational public which they, the commercial producers and distributors, alone could supply by means of new, and, as the yearly advertisements would no doubt indicate, "improved equipment and

materials." Results could not help being beneficial to education as a whole and especially to the developing program of audio-visual education.

Implications for Teacher Training: Scientific studies have demonstrated conclusively that teacher education institutions throughout the nation have been completely backward in the training of teachers in the proper use of audio-visual equipment and materials. Those self-same teacher education institutions will have to face the challenge of training as did the military. They will have to bring their training methods up-to-date and see that the classroom teacher trained by their institutions will know the somewhat simple mysteries of how, to specify one common example, to thread a film and, subsequently, to operate effectively a motion-picture projector.

Projections Ahead: The future of audio-visual education in California is one that should lead the nation. The imagination can well run rampant. The new meaning of a new day in education will become more apparent. The golden age of cultural development through the general raising of learning efficiency may well be in sight. Surely we shall live to see and bless the day that we be contemporaries of the marvels of this wonder age.

A PARENT VIEWS THE HEARING PROBLEM

Mrs. Harvey Dye, Trustee, Whittier Union High School,
Past President, 76th District P. T. A.

Equal educational opportunity for all the children of all the people is basic in the educational philosophy of democracy. The child brings to his learning experience two tools of his own: viz., vision and hearing. When he has a damaged tool with which to work he immediately loses equality of opportunity with his fellows. It is estimated that there are seventeen million people in our country—a number equal to the population of Turkey—who have hearing deficiencies. A five-year survey completed in 1937 of the school children in the United States revealed that there were three million with significant hearing losses. Enough such figures have been presented in recent years to suggest that there are many times as many children with hearing defects as with visual handicaps. Most of the hearing losses occur at an early age in children. If the measure of the citizen of today is his concern for the citizen of tomorrow then these neglected little ones among the handicapped deserve our especial consideration for patriotic as well as for health reasons.

Even lay people know that if proper adaptation is brought about any

physical handicap can be endured, but first the handicap must be recognized and the means of compensation discovered. It is interesting that while in 1924 no group audiometers were used in this country, by 1941-1942 over four million children were given such tests. Defective hearing is more damaging to the child than blindness. The child with a hearing loss lives under a stigma and a strain which leads to nervous fatigue, irritability, supersensitivity, timidity, withdrawal tendencies. His eyes work harder when there is a hearing loss, and he frequently becomes too tired to try. Since it is estimated that 75% of all hearing impairment begins before the child reaches the third grade, examination of pre-school children seems very important. The presence of a parent during testing is always to be desired, whenever possible, for the education of the parent of the hard of hearing child is almost as important as that of the child.

Many people still think in terms of normal hearing or total deafness. One does not refer to a person with impaired vision as blind, although it is common to call one who has difficulty in hearing deaf. Adults generally are not aware that partial deafness may be the cause of poor work at school and of unhappiness with other children. The child himself is not aware that he does not hear normally. Partial hearing, like visual defects, is often discovered after a child starts to school. Hearing which seemed adequate in the quiet intimate relationships of the home may be seriously deficient when the child is confronted with the more complex demands of the classroom. Unfortunately, by the time the teacher or school nurse has discovered that a child has impaired hearing it may have progressed beyond the stage where treatment can help. It is estimated that 50% of the cases of impaired hearing in young children are subject to improvement if detected and treated in the early stages. The pre-school groups, a project receiving especial emphasis in the Parent Teacher organizations at the present time, from the national to the community level, are heaven-sent for such early testing. These groups usually meet on school property, child and parent are available without special appointments and extra trips. The mother and the child attend the classes on the same day or days of the week, over a considerable period. Here is the opportunity for the speech reading teacher of the school district to inform young mothers of the signs of hearing impairment in young children, such as the strained manner of listening, the lisp or infantile speech level when the children of the same age have a wider range of words and sounds; the monotone speech, lack of inflection, the fact that a child may have adequate hearing for the *understanding* of speech but not sufficient hearing for the normal *development* of speech, etc., etc. The Summer Round-Up project of the Parent Teacher Association also provides an opportunity to discover the youngster's hearing handicap before he suffers the embarrassment of appearing stupid because of his inability to hear distinctly. A child placed in the front row on the very first day he enters school may be saved much unhappiness and the teacher and class much loss of time. Incidentally the tax payers will be saved some money, for the child handicapped by hearing losses if he receives no help will, by the time he has reached the eighth grade, have repeated grades two or three times, and have cost the tax payers between two and three hundred dollars.

Miss Phelan, speech reading teacher in our Whittier Union High School, conducted a puretone audiometer test of the ninth grade students

in March of this year. When the test was completed, in each class a report of the findings was given to the teacher. Any deviations from normal were reported. In many instances the teachers were aware of a variation in a student's conduct, mannerisms or achievement, but did not suspect any hearing irregularities. 480 students were tested. 303 students (63.1%) were found to have hearing within normal limits; 177 students (36.9%) were found to have hearing impairment of varying degrees; 121 students, or 25% of those tested, have high frequency losses of from slight to a severe degree. It is very probable that none of the severe (hard of hearing) losses will respond to treatment but all will profit from training in Speech Reading. The discovery of these youth in their freshman year enables them to plan a course of study leading to the vocational training necessary to prepare them for happy and constructive living.

The following remark from the mother of one of Miss Phelan's pupils to the Coordinator of Counseling of the school needs no amplification: "The lip reading training Robert had under Miss Phelan has been a great help to him, although his hearing loss is so slight as not to be noticeable. The first good result was that his grades in his other subjects all took an unexpected rise after one term of lip reading. He learned the most valuable of all lessons for the hard of hearing—to pay attention. And the second most valuable lesson was the realization that he had within himself the ability to overcome his handicap."

Public school authorities in European countries realized as far back as the end of the last century that the hard of hearing child needed a special education to enable him to face the future unafraid and also that he stood in need of vocational training far more than the child whose hearing was normal. This is the need that has yet to be met in the United States on a far larger scale than in the past. Parents and School Boards must be informed of the situation. There are in Los Angeles County some 320 Parent Teacher Associations, holding monthly meetings during the school year. A talk once each year on the need for hearing tests and the problems of the child handicapped by hearing defects would be well worth the effort. The "Newsettes" of the Parent Teacher groups—mimeographed sheets which go to the homes of the children every month—are good publicity media. A spot on a program of the County Trustees Association would prove of great value. State Teachers Colleges should be urged to require that speech teachers have training in lip reading.

Medical authorities estimate that more than a quarter of a million soldiers, sailors, and marines will come back from the war with seriously impaired hearing. Explosives so enormous in quantity and savage in quality have been developed that men a hundred yards away from a block-buster have been picked up without a scratch on them but stone deaf from concussion. The ear, unlike the eye, has no lid to close down over its delicate mechanism. It is said that for every man or woman killed thousands of soldiers have had the inner mechanism of the ear damaged. Tropical malaria often leaves impaired hearing in its wake. And yet these war casualties will be only a small proportion of the total number of people in our country afflicted with hearing losses. But in the post-war educational planning, opportunities provided to enable these veterans to lead normal lives will highlight the need for civilians as well. Undoubtedly the vocational counseling and guidance already being considered for the return-

ing service youth handicapped by hearing losses will benefit all such youth. The timing is right for increased emphasis on this important health problem.

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THE RELATION OF THE SCHOOL LUNCHROOM TO THE SCHOOL PROGRAM

Mrs. Lydia M. Kellogg, Supervisor of Dietetics and Director of Cafeterias, Pasadena City Schools

School cafeterias started as a penny lunch project for the purpose of furnishing food to needy children. They were manned by kind hearted volunteers. As larger centers of population developed in America and as rural communities improved their schools by developing larger districts and caring for children from a wider area, lunch service for all children has become necessary and there has developed a full fledged cafeteria or lunch service which amounts, in some of our larger cities, to well over one-quarter of a million dollars per year.

The war and its development of interest in better nutrition for all the people, but especially for school children, has stimulated the development of the school lunch project. This has brought school people face to face with cafeteria problems which are long overdue for correction or improvement.

One of these problems is fair pay to all cafeteria employees. To prepare

and serve food to large numbers of children demands workers of ability. This ability is worthy of the same pay as like work in industry and business. If these women are to stay on the job year after year, they must have enough salary to live and to save. They must also be given the same old age benefits as any other certificated or non-certificated school employees.

Another concept which must be corrected is that the school cafeteria is not the place to teach nutrition. The cafeteria should be the place where the child can put into practice those nutrition facts he has learned in the classroom. If parents who have had children six years before sending them to school and teachers who have them five to six hours per day cannot persuade a child that his food habits do have a definite effect upon the nutrition of his body, how can the cafeteria where the child is at most twenty minutes per day establish those habits?

Not until superintendents, supervisors, principals and teachers together decide that better nutrition is really important and make it the core from which develops all other subject matter, will we have better nutrition in our schools. Many a teacher has become imbued with the idea to really do something and starts out bravely, but she is soon stopped because the school schedule is such that her children cannot possibly carry out the rules they learn. For example, most schools serve nutrition milk mid-morning. The children rush and run to the cafeteria, grab a bottle of cold milk, gulp it down, then rush out and play hard for the recess period, or the teachers fret and worry because the cafeteria line doesn't move as fast as they think it should and the children just can't get from classroom, through the line, eat their lunch and be out to play in twenty minutes. Yet all health rules instruct that meals should be eaten leisurely, in good company, in quiet, colorful surroundings and an hour of rest should follow all meals, but somehow American children must play, play hard every minute they are not actually in the classroom. I am of the opinion that if the whole school program and schedule was built around health rules, our children would know as much as they know now when they leave school and be in better health to meet the new problems which they face when they exchange school for the business world.

The cafeteria is also a place where we can all put into practice some of the democratic ideas and theories we talk so much about in our schools but do so little about. The child comes to the cafeteria with his money to enter into a business transaction. In this experience he is equal with all those around him. His money is as good as any teacher's. To him, his time is as valuable as is the teacher's to her. He comes in and takes his place in the line. He knows if he does not, he will be sent out of line and be disciplined, yet he has to wait every day while one, two and sometimes several more teachers cut into the line and take a long time to make their choice, and take endless time fumbling in their handbag for their money. This procedure keeps the children standing in line as much as ten minutes doing nothing and then the cafeteria manager is criticized because the children do not move faster.

Any teacher who thinks the children accept this concept of democratic procedure is very mistaken. I always stand behind the counter and see children's faces while they are waiting and their expression is exactly what that of the teachers would be if some rude person would cut in the line at some commercial place where she was waiting her turn.

With the interest of all the country focused on better nutrition, much can be done to develop school lunch service if all school people are alert and are conscious that this service is no longer a volunteer service but a full fledged business, that cafeteria workers are entitled to more consideration, that the lunch room is the place to put in practice those facts that children learned in the classroom and develop them into better habits; that the school cafeteria is the one place in the school where teachers and children are equal in all respects and both should conduct themselves accordingly.

BINOCULAR COORDINATION AND SCHOOL SUCCESS

Clare Kerr, Special Teacher in Reading, Vine Street School, Los Angeles

In common practice "school success" means the ability to read printed word symbols. This success is measured by the level of achievement that a child attains when dealing with these symbols in the form of standardized achievement tests. His achievement quotient may or may not be considered in relation to his mental ability, or his expectancy level (as is done in the Los Angeles City schools[1*]), rather than in relation to his grade level. We talk a great deal about "fitting the school to the child" or "taking the child where he is," but the public, school boards and teachers pretty generally regard a prescribed curriculum as of major importance and the child secondary. The major portion of the basis for education is built around books and their consumption, rather than around children and their development. Thus, in order to succeed in school a child must learn to perform more or less proficiently with books.

The acquisition of this proficiency is for the most part accidental. If the child is fortunate enough to have a good heritage, both physical and mental, understanding parents, security, adequate background of experience, adequate and proper food, enough sleep and all other conditioning features which we consider negatively in the diagnostic profile of a poor book-reader, he will probably succeed in school. However, if he has accidentally been thrust into an environment where many of these things are impossible, he may have to bear the stigma of "failure" certainly through no fault of his own. School failure is probably never caused by pure cussedness, unless we adults turn the search for causes upon ourselves and discover some pure cussedness in the administration of a teaching or guidance program which narrows the conception of what education means.

*Numbers refer to bibliography at end of the paper.

For administrative purposes certain norms have been set up against which we measure children in regard to so-called reading readiness. In so far as the measure operates, well and good. We say that a child should be able to learn to read books when he has attained a mental age of seventy-eight months. This estimate is based upon certain abilities discovered by giving the child a performance test. Such abilities as judgment, discrimination, memory, etc., are measured and are necessary in this learning process. However, other obvious abilities are completely ignored except as their absence affects the performance. Then often they are not recognized and an inability to attain the desired seventy-eight, or more, level is attributed to a lack of mental capacity. A child whose hearing or sight is not sufficient to enable him to hear directions or to see the elements of the test will, of course, not succeed regardless of his true mental ability.

It is necessary at this point to set up a common understanding for some of the terms which are going to be used. It will be necessary to understand the part which binocular coordination takes in this large field which we call reading. Reading is a function of the mind and not of the eyes. A person can read with no sight. Sight is but one avenue through which impressions are conducted which facilitate reading. If we will accept the broad definition of reading as that of making discriminative reactions to stimuli, we can see at once that sight is but one element, and reading takes on a greater significance than if confined to printed symbols to be found in books and other printed matter. Success in life depends upon the facility with which a person reads himself and others, and the environment in which he lives.

Another matter of definition is that of vision. Vision is more than seeing, or sight. It is an inclusive term covering sensing, or seeing, which is the function of the eye, and selection and perception which are functions of the mind. Learning or understanding depends upon the ability of the mind to perform the last two functions. But these functions cannot be separated from seeing, if sight stimuli enter the picture. A well formed and a well integrated pair of eyes is the acme of desirability, and a degree of this ideal, from near perfection to zero, exists in every living person.

Binocular coordination is a learned ability to use one's eyes together efficiently, each eye supplementing the other in function, controlled by the mind and designed to produce a single seeing pattern without conscious effort. Normally it has a unique function, sharing importance with many other phases of the visual pattern; abnormally, it may become of major importance and a controlling force in behavior all out of proportion to intent. If this imbalance exists for various reasons, especially at the near-point, physical and mental effort is involved which it is not possible to sustain. This results in one of two things. If attention to the matter at hand is continued and the eyes are not able to maintain single binocular vision, one eye is suppressed, or suspended, and the other eye does the work. If vision is a matter of indifference, attention ceases and both eyes are diverted.

Teachers should be cognizant of certain conditions in the environment and the child which affect vision and set up measures for their control if possible. Some of these[2] are light, noise, ventilation, emotional tensions, posture, fatigue, toxic conditions, nutrition and relaxation. Aldous Huxley in his book, *The Art of Seeing*,[3] indicates that boredom is a contributing

factor in inefficient vision. Many of these things are not usually in the consciousness of teachers, administrators, or school building planners.

Teachers should also be familiar with some of the methods for detecting these difficulties. There are a number of ways in which a teacher may discover troublesome deviations in the visual behavior of children. The more or less obvious indications of these deviations, such as squinting, blinking, sties, abnormal head positions, covering one eye when studying, headaches, complaint of inability to see the blackboard should not be ignored. Adequate and capable provisions should be made for studying these symptoms. This is not generally done today. But the teacher can go much further than this casual observation, if there is no other person trained to do this, whose services are available. The following is a battery of informal tests which any person can give and arrive at a gross estimate of the need of the child for a more thorough and expert examination. These tests are:

VISION

1. Push Up (Convergence near point) Test

Equipment

A bright colored pencil or a wand made of a school penholder with a thumb tack in the side at the larger end. A red star pasted on the face of the tack. This will be called the wand and target. If the pencil is used, use the point end.

Method

The examiner sits with back to the source of light. Have the child facing the light and directly in front of the examiner. Hold the wand about two feet from the child's face. Say, "Watch the star (or point)." Move the wand slowly to within 2 or 3 inches of the child's nose. Move it back and forth if doubtful. Watch his eyes carefully.

1. Is he able to turn both eyes in against his nose and maintain a position there?
2. Does one eye turn out at any approaching position of the wand?
3. Or, is the child unable to fixate on the target?

Conclusions

If either of the last two conditions occur, the child probably has difficulty in maintaining a muscular balance between the two eyes, necessary for efficient seeing, especially at reading distance. This may be a condition resulting from some other factor in his visual pattern or it may be a part of a generally weak muscular development. If the condition is very marked the child should be referred for further examination.

2. Cover Test

Equipment

The pencil or wand with the target. A dark surfaced card about 3 x 6. (Gray bogus will do.)

Method

The position of the examiner and the child the same as in No. 1. Hold the wand with the target about 13 inches from the child's face. Warn the child to keep both eyes open and to watch the target. Move the card across the eye parallel with the face. Watch the child's eye as it is uncovered. Do not move the card too slowly.

1. The second the eye is uncovered, is it necessary for the child to move his eye in order to fixate on the target?
2. Note the direction of the movement, if any, in or out, or up or down.

Conclusions

If there is a decided inward movement, the child's eyes have a tendency to turn outward. Focusing on an object requires more than normal energy, especially at reading distance, if he maintains a single image using both eyes. If the movement is outward the opposite is true. The eyes tend to turn inward when not focusing together. If the movement is up or down the eyes are not in the same horizontal plane. Unless the child can compensate for this by a head tilt, or the suppression of the vision in one eye, he will have difficulty maintaining binocular single vision. If the movement is easily seen, and especially if the child is having trouble with reading, he should be reported for further examination.

3. Rotations

Equipment	*Method*	*Conclusions*
A pencil or wand with the target.	The examiner sits back to the light. Hold the target about 13 inches from the child's nose. Ask him to follow the target with his eyes, but to hold his head steady. Rotate the target in a circular path. Vertical and horizontal movements should be noted. The ability or inability to fixate on the target and to hold a position for a short time out of the normal line of vision should be determined.	If the child cannot follow the path of the target without head movements, and with reasonably steady eye movements; or if he cannot fixate the target with both eyes, he is probably in need of attention. He should be given the opportunity to develop this skill.

4. Fixation

Equipment	*Method*	*Conclusions*
The pencil or wand with the target. A distant point of regard, at least 20 feet away; further if desirable. This point should not be so large that the eye will not stay constant when looking at it. The big E on the Snellen chart is a good example.	The examiner should sit back to the point of regard. Ask the child to look at the distant point. Bring the target up to about 13 inches from his nose and say, "Now look at the target." Repeat a number of times. The near-point target need not be moved after once put in position.	If the child cannot make the transition from far to near, or vice-versa, and come to rest at once without searching movements of the eyes, or if he cannot fixate on the target, he is in need of attention.

5. Snellen Test

Equipment	*Method*	*Conclusions*
The Snellen letter or b r o k e n-s q u a r e chart, one of which is in every school. A pointer of some kind. A mark on the floor twenty feet directly in front of the chart. A card for covering the eye. (If the letter chart is used in the classroom, all children who have not been tested should sit with back to the chart.)	Have the chart on the wall in a well-lighted position. Have the child stand on the twenty-foot mark facing the chart. Ask him to cover one eye. Begin pointing to the larger letters, but all need not be read. When the child misses two or more letters in a line, record the number found at the end of that line, as: 20/40 or 20/30, etc. This means that the child has to stand at twenty feet to see what the normal eye can see at 30 or 40 feet, 20/20 being normal. Repeat for the other eye.	The conclusions to be drawn from the results of this test should not necessarily be taken as final. There are many contributing factors in visual difficulties which cannot be identified in this way. For instance: a child may seem to have 20/20 vision, but it is possible that he may be somewhat near-sighted with a very small pupil in his eye. Or, he may be far-sighted with astigmatism. His muscular balance may be faulty, etc. If the child has difficulty with reading he should be recommended for further study if his error reading is 20/30 or more. Combined with other difficulties discovered in Test 1 or 2, 20/20 may not be an adequate index.

6. Non-receptive Area

Equipment

A flat surface (small table or desk). A sheet of white paper approximately 9" x 12" with a 5 mm. cross drawn in the center of the sheet. A strip of white cardboard cut ¼" in width and 12 or 14" long. A 5 mm. circular spot must be drawn near one end preferably with India ink. A 1 mm. spot may be drawn near the other end. A 2 x 5 white card. Pencil.

Method

Seat the child in front of the desk with the sheet of paper placed in such a position that the X will fall directly in front of one of his eyes. Ask him to cover his other eye with the card.* Place the end of the strip near the X. Get the child to realize that he can see the spot when he is looking at the X. Now ask him to keep his eye on the X. Draw the spot out until the child reports that he cannot see it. Mark this place with a pencil. Starting at this place, draw the spot out until the child reports that he *can* see it again. Do so in many directions. Mark several places at which he sees the spot and draw a connecting line through these marks. There will not always be an area with a circumference.

Repeat for the other eye, moving the paper so that the eye is in line with the X.

*Arrangements must be made so that the child's eye is 12½ inches from the paper. This is important because the norm is set up at that distance.

Conclusions

There is not enough known about the significance of these enlarged non-functioning areas to be very definite. However, on the advice of a number of doctors who said that no harm could come from such a practice, the writer has advised children whose enlarged areas were more than 1½" larger than the normal to cover one eye in the morning for ½ hour and the other eye in the afternoon. Some children who had no serious visual disturbance seemed to profit from this practice. The experiment was done too recently to know how permanent this improvement will be.

(The normal blind spot taken at 12½ inches will fall in an elliptically shaped area, whose center is 3⅜" from the center of the paper and whose vertical meridian lies ⅜" above a line drawn through the center of the paper horizontally, and 1" below this line. The horizontal meridian of the area is 1¼". People's blind spots vary in position somewhat, but the above is sufficient for comparison purposes.)

A negative response to any or all of the above tests indicates that the person tested does not have complete control over his seeing mechanism. However, the examiner must not be overzealous in recommending that the testee have his eyes examined by a specialist. If the condition of control seems very markedly negative the eyes should be tested several times, and at different times in the day before such a recommendation should be made. Skill in making these decisions comes with practice, but it is probably better to over-estimate the number needing help, especially when dealing with children who are having reading difficulties. Acquaintance with the doctors in the locality is a very valuable asset. The writer has always found them willing to cooperate in any program of improvement.

There is another condition which it is possible to test, and which is arousing interest at present. This is the existence of what we call non-receptive areas which a child builds up in his field of vision as a defense against an inability to make his eyes work together efficiently. Dr. Brombach, of the San Francisco Polyclinic, who is making extensive use of the blind spot in diagnosis and visual education and re-education of children, says that the enlargement of the blind spot not associated with disease, but rather resulting from a transitory visual aphasia, seems to be the result of "a desire to eliminate double vision or abnormalities in binocular perception."[4] These areas are not physical in origin as is the real blind spot, but psychological and change from time to time in differing situations. These areas can be measured under controlled conditions.[5] Practically every child in the elementary grades who has difficulty in learning to read has these enlarged non-receptive areas. Whether they are cause or effect is difficult to say. Covering alternate eyes for half hour periods daily reduced the areas to normal. This covering took place over periods of time ranging from two to six weeks. All cases responded and only one failed to remain normal up to the time school closed. His blind spot began to enlarge again after being uncovered a few days. If the area does not respond to treatment, the origin is probably pathological and should be investigated. A few children whose areas were large at 12½ inches had normal sized areas at the distance at which they habitually held their books, which was six to eight inches. Some of these children reduced the area to normal by making themselves hold their reading material 12 inches from the face and keeping their heads up when working at their desks. One or two who had enlarged areas and had been recommended for refraction were found to have normal areas after glasses had been given, or orthoptic treatments had corrected the visual difficulty. This is an interesting and fertile field for investigation.

The results from various surveys which were intended to make comparisons between "school success" and visual behavior indicate that generally above the fifth grade level the existence of visual defects becomes less and less a deciding factor in scholarship. That is, as many deviations are found among good readers as are found among the poor readers. However, we must remember that our group gets more and more select the higher we go in the educational scale. Children with what we term "college material" minds will rise above serious handicaps often times and succeed in spite of such handicaps. But in these surveys (all through B7) it was found at all levels that the low normal, or less intelligent child who was succeeding in this field of book reading, had little or no visual difficulty. It is not possible to say that children in this low-normal group who had visual difficulties failed because of them, but the correction of the defects has been accompanied by a rise in the level of achievement in numerous cases.

The balance in the relationship between visual deviations and scholarship makes a different picture on the primary level. In making comparisons between "good readers" and "poor readers," that is, Group 1 and Group 3 in classrooms in grades two and three specifically, certain types of deviations characterize the poor-reader group much more definitely than the good-reader group. In order to get a picture on a percentage basis of the two groups, combining the grades, the following was found:

	Group 1	Group 3
Should be referred for refraction	13%	55%
Push Up	27%	48%
Cover Test	18%	70%
Rotation	25%	63%
Fixation	12%	39%
Vertical Balance	0%	11%
Lateral Balance at Far	15%	33%
Lateral Balance at Near	30%	46%
Fusion at Far	23%	23%
Fusion at Near	13%	23%
Large Non-Receptive Areas	43%	90%
Preferred one eye for reading	22%	59%
Poor accommodation	13%	44%
(In both eyes)	7%	37%

Certain types of difficulties were found among the good readers, such as near-sightedness, suppression or suspension of vision in one eye, and a lack of accommodative ability. These features are undesirable but they do not prevent the development of reading ability. The myope, or near-sighted person, is practically always a good book reader, and the other difficulties named, except the last, are types of behavior which the child has developed to get around his inability to see comfortably when using both eyes. The lack of power of accommodation is sometimes an insurmountable barrier, but it is many times overcome, at a cost, when there is sufficient mental urge. Also, among the "good readers" in this study, 50% of those having accommodative trouble had it in only one eye; while 84% of those having this difficulty in the other group had it in both eyes.

In the course of the routine tests given a child entering the remedial class, the Telebinocular Gray Oral Check Tests were given. It was discovered that many poor readers read better with one eye, or either eye, than they did with both eyes: that is, with fewer errors and less time. From this, these questions arose: Is the effort to make the two eyes function as a unit in reading too great for this child? Is it more book-reading that he needs? Are we asking the impossible of him? In the search for possible answers to these and other questions, the battery of tests described previously in this paper, plus the Telebinocular tests for vertical and lateral balance, fusion and acuity, were given these children. For comparison purposes the same tests were given to Group 1 in the same grade. Test of accommodation was given with the Prince's rule. The I. Q. rating is from group tests.

Tests were given in the A6 and A1 grades and in a Development Class (subnormal) as a matter of curiosity, but the material recorded on the accompanying charts is from grades two and three. They include results from testing 57 children in Reading Group 1 and 60 children in Group 3 in these grades. This involved four rooms and four different teachers.

The remarks on the third grade chart were possible because the remedial reading teacher who made the tests knew these children, having had most of Group 3 under her care at some time.

If the test results are valid one may easily see at a glance that the poor-reader group carries the major portion of the burden of lack of binocular coordination so far as eye behavior is concerned. Their difficulties are much more extreme than in the good-reader group, as is shown in the

percentage chart on pages 40-41. The 13% of the good-reader group were mostly children who had resorted to the use of one eye or were myopes.

The following charts are designed to indicate the prevalence of deviations severe enough to be considered out of the range of tolerance thus indicating undesirable tendencies. The asterisks are used as the mark of indication.

SECOND GRADE GROUP 1

	Eye covering Cases	Record for Refraction	Push Up	Cover	Rotation	Fixation	Ver. Bal.	Lat. Bal. F	Lat. Bal. N	Fusion F	Fusion N	Non-recept. Area	I. Q.	Eye Prefer.	Acuity B	Acuity R	Acuity L	Accomo.
1.				*	*			*	*			r*	113	L				
2.					*								94	B				
3.									*			*	95	B				
4.				*									100	B		80		
5.													89	B				
6.													104	B				
7.									*			*	115	B			70	
8.			*	*	*	*			*				111	B				
9.		*	*	*	*	*		*	*			*	120	L				
10.									*			r*	89	B		80		
11.										*			89	B				
12.		*	*	*	*	*							110	B		s60		
13.		*	*	*	*	*		*	*		*	*	125	B				*
14.									*			*	125	L				
15.										*		L*	129	B				*
16.					*				*				126	B				
17.				*				*					113	B	105	105	105	
18.													117	B				
19.	*			*					*	*		*	129	B				
20.	*				*								127	L	90	80	80	
21.		*	*		*							r*	102	B	105	105	105	
22.				*								r*	116	B				
23.										*			128	B				
24.										*			96	B		s60		
25.	*				*	*				*	*	*	121	B		s0		
26.				*					*		*	*	103	B				
27.	*			*	*				*			*	107	B				
28.													100	B				
29.													103	B				
30.		*	*	*							*	*	103	B		80	80	
31.					*							*	100	B				
%'s		19	19	39	42	16		13	42	13	16	51		19				9

SECOND GRADE GROUP 3

	Eye covering Cases	Record for Refraction	Push Up	Cover	Rotation	Fixation	Ver. Bal.	Lat. Bal. F	Lat. Bal. N	Fusion F	Fusion N	Non-recept. Area	I. Q.	Eye Prefer.	Acuity B	Acuity R	Acuity L	Accomo.
1.		*	*	*	*	*		*	*			*	102	B				*
2.			*	*	*	*		*	*				110	B				
3.		*		*	*							*	109	R				
4.		*							*			r*	109	B				*
5.		*	*	*	*	*			*				89	B				*
6.					*							*	100	ab				
7.												*	98	R				
8.		*	*	*	*	*						*	90	B	105	100	80	*
9.		*	*	*	*	*			*			*	110	R		70	70	*
10.		*	*	*	*		*					*	73	R	80	70	70	
11.				*		*			*			*	119	L				*
12.		*	*	*	*	*	*	*	*	*	*	R*	112	L				*
13.		*	*	*	*	*	*	*	*	*	*	*	110	R		50		r*
14			*	*	*	*						*	130	L				*
15.				*	*			*	*		*		93	L				
16.									*			*	100	L			70	
17.					*							*	92	B				*
18.	*	*	*	*	*	*	*	*	*	*	*	*	116	B				
19.				*	*				*			*	79	R				
20.	*											*	100	R				*
21.		*	*		*							r*	102	B	110	110	110	
22.		*	*	*					*			*	99	B		80	80	r*
23.	*	*	*	*								*	114	L		70		r*
24.	*		*	*	*			*	*			*	94	R	105	105	105	*
25.				*	*							*	97	L				
26.									*			L*	85	L	105	105	105	*
27.				*			*	*	*				97	B				
28.				*		*		*	*			*	128	B				
29.				*	*		*		*			*	100					
%'s		45	48	83	83	66	17	28	62	10	14	90		60				48

THIRD GRADE GROUP 1

	Eye cover. Cases	Record for Refraction	Push Up	Cover	Rotation	Fixation	Ver. Bal.	Lat.Bal. Fus. F	Lat.Bal. Fus. N	F	N	Non-recept. Area	I. Q.	Rd. Gd. Pl.	Eye Prefer.	Acuity B	Acuity R	Acuity L	Accomo.	Remarks
1.								*					133	3.2	B					
2.				*								*	97	3.3	B		80			
3.		*	*									*	108	3.5	B		80	70	L*	Tends to use one eye
4.												*	104	4.5	B					Myope
5.													103	3.2	R					
6.	*	*	*	*	*	*		*	*	*	*		94	3.0	L		60	90		
7.									*				120	3.9	R					Uses only one eye
8.			*							*		*	133	5.4	B				L*	
9.			*										115	3.5	L					
10.													106	3.3	R					
11.			*					*	*				100	3.9	B					
12.									*			*	120	4.1	B					
13.													124	4.0	B					
14.			*		*			*		*			115	3.0	B					
15.													96	3.5	B					
16.													102	3.7	L					
17.												*	116	5.0	B					
18.													121	3.2	B		80	80		Holds book close
19.													110	3.6	B					Myope?
20.													99	3.6	B					
21.													116	2.9	B					
22.	*	*	*	*	*	*		*	*	*	*		113	3.5	L					
23.				*					*	*	*	*	100	3.2	R					Uses only one eye
24.	*		*	*								*	104	3.5	B	80	70	80		Holds book at 8"
25.										*	*	*	105	3.4	B	105	105	105		
26.													101	2.9	B					Eye cover case. Holds book at 12"
27.			*	*						*			102	3.9	B					
28.			*							*			107	3.1	B		60	80	*	
29.	*												101	3.3	B				R*	Orthoptics—Eye-cover case
%'s		14	14	28	25	7		14	25	28	14	36			21				18	

THIRD GRADE GROUP 3

	Eye cover. Cases	Record for Refraction	Push Up	Cover	Rotation	Fixation	Ver. Bal.	Lat.Bal. F	Lat.Bal. N	Fus. F	Fus. N	Non-recept. Area	L. Q.	Rd. Gd. Pl.	Eye Prefer.	Acuity B	Acuity R	Acuity L	Accomo.	Remarks
1.	*	*	*	*				*	*			*	95	1.9	B	80	80	80	*	
2.										*			Glandular deficiency. Delayed physical development 112	2.4	L	110	110	110		
3.				*	*	*			*			*	76	1.5	B					Too young for grade
4.	*	*		*	*	*		*	*	*	*	*	84	2.7	L			80	*	Absent great deal
5.												*	95	1.6	L					Refraction-Orthoptics
6.	*	*	*	*	*	*				*		*	Absent great deal. Movies (actor) 91	1.7	L				*	
7.	*	*	*	*	*	*		*				*	111	1.8	L				*	
8.	*	*	*	*	*	*		*	*	*	*	*	103	1.4	B				*	
9.	*	*	*	*	*	*		*	*	*	*	*	Refract. glasses. Wore patch 10 min. daily—1 month 100	1.5	R	80	80	80	*	
10.	*			*	*	*						*	105	2.0	L					Left the school
11.												*	87	1.8	R				*	
12.	*	*	*	*	*	*		*	*	*	*	*	105	2.1	B		80		*	Absent great deal
13.	*	*						*	*	*	*	*	98	1.9	R					
14.	*	*	*	*	*	*		*	*	*	*	*	Under par physically. Took Stuarts Formula 100	1.8	R				*	
15.		*											106	1.9	B					Ref. and glasses. No cov.
16.		*						*	*	*		*	Ref. and orthoptics. Has had difficulty 96	1.9	L				*	
17.	*											*	109	1.5	L					Left school
18.		*	*	*	*			*				*	96	2.5	L					
19.												*	Eye-cov. Finger training. Push up 73	1.5	R				*	
20.	*	*		*	*	*					*	*	96	1.8	B					
21.				*	*							*	93	2.5	R					Refract. Glasses
22.		*		*	*							*	93	2.0	R					Absent half term
23.			*			*			*			*	93	2.2	R			80	*	
24.		*			*	*						*	92	1.2	B					
25.	*	*	*	*	*				*			*	114	1.9	B	80	80	70		
26.	*	*	*	*	*				*			*	104	2.3	ab					
27.	*	*										*	85	1.8	B	60	60	60		
28.	*	*	*	*	*			*	*		*	*	110	1.6	R	100	80	80		Vit. A and D Left school
%'s		68	46	50	58	43		41	50	30	24	93			67			43		

Many more things should have been done to complete this study. If time had permitted the groups should have been reorganized, retested and re-charted. The reading gains for Group 3 in these two grades added to the gains made by Group 3 children in other grades, who were studied but not included in this survey, certainly repay for all the effort and time which was spent on them. It is the writer's opinion we could free ourselves from at least 75% of the burden of maladjustment which we now carry if attention were to be given these children before they find out that they cannot succeed in the normal school activities involving printed symbols. Many children have to be taught to see efficiently. All children could profit from a visual-education program that included training in the use of the eyes as well as the use of external materials. Some children who are in the upper group need attention in spite of their performance. They are the ones who pay too high a price in nervous energy in order to maintain their position.

The conclusions to be gathered from this limited study are not unique. The problem of the relationship of a lack of binocular coordination and poor reading has been studied in many places and by many persons. Dr. Thomas H. Eames, of Harvard and Boston Universities says: "After an examination of the ocular characteristics of a reading-disability group, an excessive amount of exophoria was exhibited by this group, especially at the reading distance. . . . Exophoria of three prism diopters or over, occurring at the reading distance, especially in reading-disability cases, is nearly always troublesome, although the patient may not be conscious of much discomfort. Treatment for the elimination of the defect is decidedly indicated."[6]

Winifred Hathaway says, if an educational system "is to keep in the vanguard of leadership, it must give even more vital attention than has in the past been accorded first, to the possibility of child's physical fitness to profit to the full from the experiences offered; and second, to the environment that will contribute most to his development . . . A message that must travel over an impaired road is not only apt to lose much of its potency but is likely to reach its destination in such an indistinct form that interpretation by the brain is problematical . . . ."[7]

W. F. Dearborn thinks that "The somewhat frantic efforts now current in schools and colleges towards salvaging the surprising number of students who are academically pigeon-holed as cases of reading disability, might have been forestalled by the early recognition of what may be described as essentially a condition of (visual) fatigue."[8]

Ilg, Davis and Gray say: "Many children are unable to learn in school because of irreguarities in the functioning of the eyes. Some children must be 'taught to see.' "[9]

Dr. Lloyd Mills says: "The establishment of normal patterns of sight and a method of 'how to see' should be among the first facts taught to every child."[10]

George Spache says: "It is highly important to determine the extent of monocular preference in strabismus, muscular imbalance or other gross defects which tend to result in loss of binocular coordination, as these are commonly associated with less than normal progress in reading."[11]

Luckiesh says: "Recent measurements of the pupil size encourage the

prediction that it may become a reliable indicator of eye fatigue and even general body fatigue."[12]

T. A. Brombach says: "Binocular control of the various functions of the eyes meets with many obstacles during the formative period of the child. The principal visual difficulties responsible for the slow progress made in acquiring reading skill are those that are produced by interference in maintaining comfortable control between the two eyes."[13]

Park and Burri conclude that "If a child has not learned to read (at the proper time) and ocular difficulties are present, it is wise to correct these difficulties with proper orthoptic training and to repeat the steps used in early teaching of reading. However, much of this corrective work might be avoided by proper supervision and guidance in the development of binocular habits during the first and second grades."[14]

"Educators would do well to study some of the elements involved in commercial production and to realize that they are in the production business, too: that is, the business of producing situations in which children can develop acceptably. This may be called an educational program, the first task of which should be 'to learn more about those we wish to educate.' "[15]

CONCLUSIONS

1. As expected, intelligence is a major controlling factor in "school success," regardless of visual handicaps.

2. The child who has no visual handicap has a great advantage in learning to read printed word symbols. This is especially true of children who have normal or less intelligence.

3. We should not measure success from reading scores alone.

4. Generally, visual handicaps characterize the poor-reader group.

5. Children who are succeeding in reading with visual difficulties are doing so by establishing undesirable visual habits.

6. Defects in coordination rather than those of acuity of vision seem to characterize the poor-reader group: that is, there are as many deviations from the normal in acuity in the good-reader group as there are in the poor-reader group.

7. Poor readers, as a rule, build up large non-receptive areas in their fields of vision. The good reader who does this practically always is a myope, or he holds his book six to eight inches from his face when reading.

8. "School success" is largely dependent upon the control of the visual pattern including seeing, selecting and perceiving.

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SOCIAL ASPECTS OF DEFECTIVE HEARING

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Deafness and defective hearing are bound to produce personality effects that should not be under-estimated. Persons who have never acquired hearing can have but little comprehension of what they are missing. Nevertheless they must recognize the meaning of that lack. Individuals who have once possessed hearing are definitely able to compare a state of full hearing with that which now besets them. The significance of the difference may easily appal them. For the youth the problem is, as a general rule, more serious than for those whose lives have been far spent.

Any handicap is likely to give the affected person a sense of inadequacy. To begin with, an inferiority complex may definitely emerge and, as a result, paralyze the efforts of constructive workers with the handicapped. At once comparisons are made with those in full possession of their hearing powers. To many comes a feeling of hopelessness gradually accompanied by a full surrender to the spirit of failure. Such an attitude toward life often demands sympathy from the public. The thousands of maimed and crippled

who ask for alms in unconventional ways are an illustration of the results of ineffective work with this group.

Handicap tends to develop an unhealthful degree of sensitiveness, particularly if the afflicted person realizes that constant comparisons are made between him and those possessing all their physical faculties. One can understand the tendency of the deaf and other handicapped persons to withdraw from normal associations and flock with those suffering from a similar handicap. From the sociological standpoint such segregation is usually undesirable and complicates the problem of adjustment to normal social relations. The circle of acquaintance and friends accordingly is too small to enable a person to realize his potentialities. A feeling of inadequacy, an inferiority complex, hopelessness—these are mental attitudes that spell failure. Why not recall the fact that some of the most severely handicapped persons have made their lives a brilliant success. What Helen Keller has accomplished is probably unique in the annals of history. What Edison, Beethoven, Alexander Graham Bell and others have overcome all attests to the determination of handicapped person not to permit deafness to stand in the way of success.

Unfortunately handicaps frequently lead to mental or moral maladjustments. There must be compensation for inadequacy. The dam behind which one's emotions are imprisoned breaks and conduct runs riot. Too often it takes the form of crime, or, in the case of children, of juvenile delinquency. For several years Mr. and Mrs. Willard Hargrave, directors of the Children's Hearing and Speech Clinic of the Los Angeles Auricular Foundation, have been testing children brought to Juvenile Hall, our county detention home. They have discovered that among deliquent children the percentage of deafness far exceeds that found among the non-delinquent. Each month, each year the story is the same. Information such as this is important and marks one of the first steps in intelligent treatment of the delinquency problem.

People who become sorry for themselves are frequently victimized by the public because public sympathy is often superficial and is not concerned with basic procedures for meeting situations. Social workers know that feelings of inadequacy must be met with a challenge to the best within a person to make the most of life. Hence the technique of the social worker must be introduced at this point. A fundamental step consists in persuading the individual to accept a situation in realistic fashion. In other words, get one's feet on the ground. Of course medical attention must be adequate. The individual should learn whether his hearing can be improved, will remain stationary or is likely to deteriorate. Second the degree of handicap, must be ascertained and the individual energized into a resolve not to permit a single shortcoming to interfere with life's aims and purposes. Others have succeeded, why should not he? To gain confidence in himself he must slough off the specter of defeat. Belief in one's self is half the battle. The beginning of a forward look by the patient can be attained in the hearing clinic or by the social worker in his early contacts with the individual and his family.

The counselor or social worker must enable the individual to visualize both the possibilities and the need of a general education. Frequently schools for the handicapped employ as field workers men who have mastered their handicap and who therefore can demonstrate to prospective students what

education can accomplish. But beyond the ordinary educational program lies the field of vocational training. Preparation for such industrial pursuits as lie within the boundaries of successful achievement is a necessary part of a practical curriculum. On the other hand, the exceptional person may succeed in most occupations. Deaf persons have been discovered in nearly all walks of life.

Nine-tenths of our people eventually establish themselves in family life. As a rule the deaf should not be debarred from this possibility, although ugenic considerations may, in some cases, deter them from having children. The picture of lives in isolation is not a wholesome one to view. It is better under ordinary conditions for the deaf to marry hearing individuals rather than to mate among themselves.

Since nearly every person is part of a family, it becomes essential for parents, brothers and sisters to cooperate with the handicapped person in such manner as will develop confidence and hope. Only too often fathers and mothers assume over-protective attitudes and destroy that feeling of self-assurance that the social worker has so painstakingly fostered. Parents may make or break the possibilities of their children. Treat a child in normal fashion and the handicap from which he suffers begins to fade. Presently the self-consciousness that beclouded his happiness all but disappears. Adjustment must, of course, be made but the road to success is never without its hurdles. Hardships and inconveniences, when not overwhelming, lead to vigor and determination.

Since the education of the deaf requires about 50 per cent more time than the education of the normal, proper adaptation to this need must be made. In some cases additional costs will be involved and these should in part be paid by the public.

Even though the individual is prepared to live normally and his parents and other members of the family give him enthusiastic support, the intelligent support of the school is necessary. Otherwise his education and training may not be properly attained. Schools must test the hearing of children. They must segregate certain cases and give others such advantages as will enable them to obtain the necessary education.

Oversized classes and lack of individual attention to pupils spell disaster in any school. Hard-of-hearing children should be seated where they can hear. They must be given opportunity to participate in class discussions as well as to compete for such distinctions as their talents will permit. Owing to the varieties of nationalities that appear in some of our lower grade classes, teachers frequently become indifferent to the difficulties encountered by some of their pupils and direct their efforts chiefly to those who are of direct American ancestry. The others learn little or nothing. It becomes simple to transfer a similar indifference to the hardships encountered by the partially deaf, the defective-vision cases, and other physically handicapped children. If the school, as one of the factors responsible for the personality development of a handicapped child, performs its duty then the task of the family will be greatly simplified.

There is another influence of great moment—the community. This is a very complex factor and the inter-relations of neighbors, friends, associates and companions with a handicapped person are capable of promoting confidence in one's self or of hindering that development on which the likelihood of success depends. An enlightened and sympathetic public opinion is

needed to direct the mutual activities of the normal and the handicapped. Danger frequently arises in connection with the leisure time activities of our youth. Do the character-building agencies invite the handicapped to participate in their programs and to join their bands or groups? Do they attempt to push them aside or try to organize them in separate groups? Do they recognize the dangers of isolation and the social value of including all who can profit from their service? These are questions that are rapidly coming to the front as information is gathered relative to the large number of persons handicapped through deafness, crippled conditions, imperfect eyesight, or constitutional limitations.

The community does not yet realize that if the family fails to carry out its responsibilities, the cost of such indifference frequently falls back upon the public. Beggars, ne'er-do-wells, delinquents and criminals—these are the by-products of neglect. Finally the larger community must pay the costs.

The situation today demands a complete and well organized program for dealing with the handicap of total or partial deafness. Although the totally deaf number not more than one per thousand of the population, partial deafness is widespread and several millions are affected. When hearing clinics have examined all suspected cases and when the schools have done their part, the problem of adjustment to industrial life still remains. Our machinery to meet these situations is still inadequate. The obstacles to successful occupational placement are many. In a time of depression when the normal man or woman has difficulty in obtaining a position, how much greater is the difficulty of someone burdened with a handicap! Unemployment becomes almost inevitable.

As a rule industry is not interested in accepting workers merely because employment offices may seek to place them. It is interested in men and women who can produce the required amount of work and without involving the industrial plant in other than the normal hazards. Accordingly we find prejudice against the partially deaf and little desire to employ them. Ignorance as to their possibilities undoubtedly prevails but little attempt is made to discover their potentialities and their peculiar adaptability to certain positions. An imminent danger relative to certain positions consists in the likelihood of accidents owing to the inability of the worker to sense a danger that can be avoided by the fully-hearing worker. Many positions require people with acute hearing. On the other hand there are thousands of jobs that would be unaffected one way or the other. Nevertheless the prevailing pattern of thinking among employers excludes the use of handicapped workers.

A cumulative effect that accentuates the non-use of deaf or partially-deaf workers is the attitude of insurance companies, some of which refuse to carry insurance for corporations that risk the use of such workers or at least require companies to pay a higher rate. At times when the margin of profit is low employers are loath to indulge in this bit of sentimentality.

From the standpoint of legislation, deafness has not yet received adequate consideration. The Social Security Act has a section providing for services to crippled children. The word "crippled" is not defined to include deafness but additional funds are provided in Title V Part 4 for the vocational rehabilitation of the physically disabled. Although the deaf are not

mentioned, they are receiving some attention in several states under the provisions of this section of the law.

In California the Bureau of Vocational Rehabilitation has given considerable service to the deaf. The preliminary conditions required are the following: they must be of sound mind, sixteen years of age or older, cooperative and employable. To such persons the Bureau will give vocational guidance, it will pay certain tuition fees, provide books and equipment and help in the buying of hearing aids. Finally, it tries to find positions for as many persons as possible. The occupations entered by a group of persons whose hearing had not entirely vanished is shown in the following table taken from one of the Bureau's reports. The figures are for the year 1942:

For men:

Occupation	Number Employed
Operative (Mill or factory)	1173
Unskilled	533
Compositor, etc.	330
Shoemaker	129
Teacher	128
Paint, Varnish	105
Forest	98
Farm	90
Janitor	89
Other	1111
Total	3786

For women:

Occupation	Number Employed
Operative	574
Domestic	120
Teacher	75
Dressmaker	65
Welfare Worker	53
Clerk	44
Waitress	27
Other	172
Total	1151

Our employment offices have not yet risen to the emergency confronting the deaf. They need to establish special departments for the handicapped and to man them with a staff specially trained to handle the types of applicants referred to them. The ordinary placement officer cannot serve either the blind or the deaf effectively. Contact must first have been made with industrial concerns to discover what positions may be open to the deaf or partially hearing. Furthermore the cooperation of employers in giving the handicapped person a square deal must be obtained. Gradually a greater willingness to accept such workers will emerge and the problem of placement be simplified.

The federal civil service system at first was distinctly unfriendly to the deaf. In later years, however, certain positions are open to them and some have actually been employed. The American Association for the Hard-of-Hearing and local organizations of similar character need to carry on an educational program that will result in the opening of vocational opportunities for the deaf in all fields in which their placement means reasonable safety to themselves and others and in which their labor is worth the hire.

The social aspects of deafness continue to need special attention. The problem is exceedingly complicated. Physical examinations and medical care are an important part of an expanding program, but the psychological and social phases of work with the deaf must not only supplement the work of the physicians, they must prepare the individual for adjustment to the countless vicissitudes of daily living.

THE USE OF AUDITORY STIMULATION IN THE SPEECH PROGRAM

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The need for auricular education in any program of speech correction or speech improvement can scarcely be overemphasized. This need is equally imperative whether one is working with the deafened, the hard of hearing or those children who simply have not "learned to hear." Just what should be included in the term "auricular education" depends, of course, upon the case-load of any given school system's speech department. These things, however, appear indispensable if any speech or auricular education is to be undertaken: first, an adequate testing program. By that I mean more than the ordinary group audiometric examination. Rather it should include devices for testing high frequency acuity as well as pitch discrimination, auditory memory span and general auditory acuity. Second, there should be equipment for acoustic amplification—this is indispensable in working with children who have any hearing loss. It has been my experience that even so-called "psychological deafness" responds favorably to acoustic amplification. And third, special emphasis should be placed upon auditory stimulation—of the right kind. The kindergarten and primary teachers who develop habits of listening to and interpreting sounds in all activities are laying the ground work for learning not only better speech, but reading, spelling, music, and social adjustment. It is scarcely necessary to mention the regretable fact that most teachers like most parents talk too fast, too much, and too loudly. The speech correctionist alone cannot hope to provide adequate auditory stimulation to children with speech and/or hearing defects. It is her responsibility to familiarize her teachers with the needs and techniques involved. This can best be done by actual demonstration within the classroom and results are immediate enough to convince most teachers of the value of auditory stimulation.

Why all this emphasis upon auricular education in general and acoustic amplification in particular? Briefly, to teach children to use all of the hearing they possess and to give as near normal acuity as possible to those suffering from defective hearing.

It might be interesting to note here the views expressed by the outstanding authorities the field of speech pathology. In speaking of dyslalias caused by deficiencies of hearing, West, Kennedy and Carr say, "Hearing is as important to good speech as sight is to good handwriting. It is the means by which sounds are learned, articulation is directed, and inflection controlled."[1] They go on to point out that speech sounds have only as many properties as there are means of perceiving them; in that sense the complexity of our language has been built around the auditory faculties. We are restricted in our repetoire of sound units by the physical limitations not only of the mechanism for producing them, but also of the hearing equipment for receiving and perceiving them. For example, the words FATHER and FODDER are very much alike except for the medial consonants. In FATHER the air pressure is practically even since the air is emitted in a

continuous stream throughout enunciation. In the word "fodder," however, before the medial "d" is sounded the airstream is momentarily dammed up this building up the pressure. These characteristic *pressure patterns* which distinguish words and sounds are perceived, we believe, through the mediation of the kinesthetic nerves of the tympanum and the tensor tympani muscle, in much the same way that one carrying an open umbrella in the wind could determine changes in air pressure by the amount of muscular effort required to keep the umbrella straight when struck by the gusts of wind. The plosives are largely distinguished by their pressure patterns. They are, P-B, T-D, K-G, CH-DG. Since all of these are much alike in their pressure pattern the hard of hearing child is very apt to confuse them unless sufficient sound amplification is employed to bring out the fundamental tone present in those that are voiced or sonant sounds. "P" vs "B" for example, is "voiceless contrasted with voiced" versions of the same pressure pattern.

High-frequency perception enables us to distinguish P-T-K-F-V-S-and SH from all other voiceless sounds. Hence the necessity for checking a child's ability to hear within this range for from 2400 to 8000 vibrations/sec.

An ideal approach to teaching the child with high-frequency deafness would be, of course, the use of a wave filter or tone control to damp out the tones of lower frequencies. This would allow the pupil-patient to concentrate on the high-frequency sounds, which would otherwise be "drowned out" by the much louder lower-frequency sounds. In the absence of equipment to filter out the low-frequencies a combination of several approaches to speech may be used. These are: cutaneous sensation (feeling the puff of air as in "P" or the thin air stream as in "S" on the moistened palm), visual (observing the instructor and self in mirror while trying to produce sound) and the amplification of voiced elements within the word or words being taught.

Perception of resonance vibrations enable us to distinguish M-N-NG-R-L-W-J and H as well as the vowels. (H is not a single unit but rather takes on different whispered characteristics depending upon the following vowel.) Since most severe hearing cases cannot perceive sounds within this range (400 to 2400 vibrations/second) and since it is practically impossible to see the adjustment of resonators to produce different vowel sounds the use of acoustic amplification is invaluable in teaching speech to pupils who have never possessed normal hearing and for those whose hearing loss has resulted in extreme over-nasalization of all vowel sounds.

I have found it very helpful to have the pupil listen to his own speech attempts in this manner. The microphone is so placed that the child can set the receiver of his individual hearing aid within a few inches of the loud speaker of the large amplifying equipment and still wear his own head phones or ear attachment without getting any "feed back" noise. The volume control is then adjusted to the pupil's need and the tone control regulated to bring up the weaker frequencies. The teacher produces the desired sound five times with about two seconds between each stimulus. After a pause of a few seconds the pupil attempts to produce the sound. This has proved highly successful in overcoming the nasal monotone so frequently associated with hearing defects.

Not that auditory stimulation and acoustic amplification need justifica-

tion—the results obtained speak for themselves—but I would like to bring in at this point what seems to be significant neurological bases for this approach to speech development. Experimentation by Wever and Bray[2] indicates that there is a perfect correspondence between voice waves and the auditory-nerve impulses. They were able to understand words spoken into a cat's ear by translating the nerve impulses from the auditory nerve back into the form of sound waves.

Travis and Dorsey[3] have shown that in the case of the dog there is a striking synchronization between the sound-wave frequency in phonation (whining and barking sounds) and the action-current frequency in all fields of the brain tested (all the commonly considered brain areas). This synchronization extends to include the action currents in the cricothyroid muscles which in a large measure control phonation. Thus there is seen to be a faithful transmission of the stimulus frequencies through the receptor and the central nervous system into the muscles. These findings convince us of the necessity for approximating, insofar as possible, a *normal* receiving mechanism if speech with its widely varying properties is to develop. It is obvious that sound amplification is the only method so far devised that even begins to approach the desired normal receiving mechanism.

Before considering with you three representative cases with which I worked this past year, I would like to explain my point of view in speech correction and the psychological principles behind that point of view. I quote from Travis[4]:

> "Learning is more than a function of repetition of response. It is a question whether such repetition should be at all construed as a casual factor in the learning process. We might say that instead of the individual learning by acting he acts to see if he has learned. In speech and song we have evidenced on all sides of us that new responses are made correctly the first time. It is easily demonstrated that an individual may so learn a tune by just *listening* to it that he produces it correctly the first time he attempts it. When we attempt to sing a song, we may be doing so to see if we can sing it and not to practice it. We do not learn it by drilling but rather by *hearing* it. From the standpoint of learning it is probably the repeated *stimulation* that is helpful. . . . We do not want drill words on which the speech defective stumbles, but *stimulus* words given by the teacher which he thus always *hears* correctly . . . *In learning, perceiving the goal is important.* A correct sound formation (the goal) is not based upon an elimination of so-called random 'trial and error' movements, or upon a successful combination of such movements, but upon an entirely new movement unit. The child should not think about the movements as such, or, like the centipede who was quite happy until asked which leg came after which when he began to run, he will be wrought to such a pitch that organized activity will be impossible for him. He should, however, strive to perceive the goal, the end product in its totality. Once this configuration is completed, the movements take care of themselves. At the outset the goal may be very vague and indefinite. The child may not be able at first to perceive a sound in relation to the means of producing it. He makes his initial move and immediately finds him-

self in error. *But as he matures* by *being properly stimulated* the goal becomes clearer until finally he correctly produces the desired sound. Maturation is a differentiation of stresses in the nervous system which makes possible the construction of new reaction patterns . . . *There should always be a pause between the last stimulus word and the pupil's response.* The maturation process continues for some time after the stimulus ceases to act."

I would like to stress that last point. If there is one sin common to all speech teachers (all teachers, perhaps), it is that they do not allow sufficient time for the child to "absorb" what he has heard. Perhaps hearing in its fullest sense is not the lightning-quick process we assume it to be.

The cases I wish to report on are representative in that one is a boy who was considered congenitally deaf—completely so—until Mr. Willard B. Hargrave, of the Auricular Foundation Speech and Hearing Clinic, found that he had sufficient residual hearing to justify the use of a hearing aid and speech training. The second is a girl with a very severe hearing loss which has been progressing since she was a small child but who had limited speech, and the third is a little boy with practically normal hearing who simply had not learned to hear or to use speech as a means of communication.

The boy who had been considered entirely without hearing came to my attention last fall. After repeated urgings his mother was persuaded to take him to the Auricular Foundation's Clinic for testing. In her defense may I say that the mother considered the son's case hopeless since she had spent thousands of dollars having the child tutored, taking him to the finest schools and clinics in the east and in having him taught lip reading. Jack is sixteen, a handsome, intelligent and charming boy with a genius for building model railroads. Unfortunately he is quite satisfied with life as he knows it, his mother worships him and does all his "hearing and speaking for him." His father appears rather detached, almost baffled by the situation. In addition to lip-reading Jack and his mother have a complete system of communication by means of gestures, facial expressions and drawings but no one else can communicate with Jack without sound amplification of an intense degree. Jack had to drop out of school in the fifth grade. His education has been rather "hit or miss" since that time. A year ago he was admitted to the Alhambra Continuation High School in the hope that he could get some vocational training just by observation. This proved useless. Finally the parents took him to Mr. Hargrave who, as I have told you, prescribed an individual hearing aid. Jack has very little hearing. The Alhambra Schools then furnished him with a Home Teacher who attempted to teach him to read beyond the simplest primary text. It was "slow going," for Jack did not associate the sounds he was hearing, for the first time, with either their printed symbols or their meanings. In March he was again referred to me and it was arranged for me to go to his home three hours each week for individual speech instruction.

We began with the simplest nouns and verbs pertaining to his one and only interest, trains. I would point to a picture in one of his numerous Model Builder magazines and catalogues, name the object, print out the name, repeat it slowly four or five times with pauses between each stimulus word. It was necessary for me to speak directly into his hearing aid and have the volume turned up as full as possible. Not more than five words were ever attempted at one lesson. In reviewing previous lessons I would

keep my face hidden so Jack could not read my lips. The only abstractions given him right from the start were the words, WHAT, WHY, WHEN, WHERE, and HOW. To stimulate his interest in listening activities I took the school's radio-phonograph and some "hot" music to his home. This seemed to give Jack an interest in listening to the radio—a thing he had previously refused to attempt. To stimulate Jack's interest in written symbols as a means of communication he was asked to draw a train and then make a story about it. That was a struggle—but worth it. He drew an excellent sketch of a locomotive, the story was this:

ERIE TRAIN

It is 4-6-6-6. (Designates wheel arrangement.)
It is big. (Demonstrated bigness.)
It is heavy. (Demonstrated lifting great weight.)
It is back East. (Pointed out Chicago and New York on map.)
It goes Chicago-New York.
It is not here.
In 1948 it is new model.

This represents two week's work. It should be kept in mind that Jack had to communicate the ideas to me after which I printed them in the form above and he learned each word as a written, aural, and spoken symbol.

In April it became necessary to combine Jack's lesson periods with those of the girl of whom I shall tell at this point.

Last September "Betty," aged sixteen and suffering from a very severe hearing loss was in the eighth grade of one of the Alhambra elementary schools. Her limited speech was almost unintelligible. Her school progress had been painfully slow—she was simply advanced from grade to grade in the hope that she might get a little by reading the teachers' lips. Her educational achievement was not up to grade, in spite of her age, and on a Binet she scored a very scant 75 (we gave her the benefit of the doubt in every case). By mid-year it was evident to me that no amount of speech correction would help without some means of sound amplification. Her parents were most cooperative and took her to the Speech and Hearing clinic where Mr. Hargrave determined her auditory needs and prescribed an individual hearing aid. From the very first lesson with the aid of amplification Betty made great progress. I went to her home for two hours each week and her mother worked faithfully and intelligently with Betty every day—following the exact procedures as I outlined in each lesson. Betty was furnished a home teacher by the school district and was able to carry several high school subjects including English during the last half of the semester. Her progress has been sufficient to date that Betty has been recommended for part-time work in the Alhambra High School for next year. I am confident that within two years her Binet score will rise abruptly.

During the latter part of April I combined Jack's and Betty's lesson periods so that we might work with the large amplifying equipment belonging to the school district as well as their own individual hearing aids. As already stated, they were given a great deal of stimulus sounds and then permitted to hear their own attempts by means of speaking into the microphone of the amplifying set. Their own receivers were placed in close proximity to the loud speaker. Objects were named, action verbs demonstrated, written on the blackboard with accented syllables printed in larger letters than the rest of the word and then presented orally through the am-

plifier. By the first of June we were able to compose three or four sentence stories about simple pictures, develop the vocabularies and read them. Betty's speech gradually lost most of the extreme nasality and much of the monotony after she was able to hear herself. Jack's consonants were quite well developed by the close of school and he had acquired about four different vowel sounds. Although he had not yet gained sufficient control to eliminate nasalizing all vowels he was well aware of the error and frequently produced sounds that delighted his soul. In fact, one of the most gratifying aspects of the work I have described so far is seeing the wonder and delight in the children's faces when they hear themselves—and realize their successes. Considering the limitations of the equipment with which we worked Betty and Jack made excellent progress.

The third and last child I would like to speak of is a little seven-year-old boy the first son of deaf mute parents. He is the older of two boys. Bobby was referred to me by his teacher because he was becoming such a problem. He had repeated both kindergarten and first grade yet his reading readiness test revealed "no readiness." He was fast becoming a behavior problem in the classroom and developing habits of deceit and destructiveness. His speech was limited to a few invented words and odd vocal noises. He constantly attempted to use the sign language which was the only means of communication in his home. Although his younger brother could and did use speech in speaking to others, the two boys always used sign language and gestures in speaking to each other.

Numerous home calls (and interminable writing by the mother, the Elementary Visiting Teacher and me) revealed these facts: Bobby's birth had been normal. His early physical history was good, although he had been subject to frequent colds during the past two years. There had been no one with either speech or hearing in the home until Bobby was almost four years old, when a grandmother visited in the home for two months. An aunt and uncle, both deaf mutes, had lived in Bobby's home until he was six years old. The mother was in extremely poor health and had little or no control over either of the little boys. The father had been out of work for many months and their tiny home revealed their financial struggle to some extent.

Bobby's teachers could not decide whether he was "a moron, deaf, or just plain mean and stubborn." In utter desperation they brought him to me. I was as uncertain as they. Bobby would echo melody patterns of any and everything said to him. He would shake his head yes or no—depending on what he hoped you wanted him to do. However, he seldom recognized a question as such and in the classroom watched the other children and tried to do a few of the things he observed them do. His ability to make characteristic little boy noises for trucks, planes, trains, and bombs convinced me that he had sufficient hearing for speech development, but the fact remained he was not learning to speak nor attempting to understand oral directions or questions. We struggled along until February with Bobby making only a slight improvement, then in desperation I sent him down to Mr. Hargrave to see if he could detect some "obscure kind of deafness of which I had never heard." There was found only a slight hearing loss, but upon hearing the child's history, Mr. Hargrave pointed out that he simply "had not learned to hear sounds as a means of communication," he had been born into a silent home; then at five years plunged into the noise

and confusion of the school room where this utterly strange language, a spoken language, was being used. Words were only a jumble of sounds to Bobby and not a means of communication. Mr. Hargrave outlined for me steps to be taken to "teach Bobby to hear and to give meaning to the sounds heard." They were followed in this manner. Bobby's situation was explained to his teacher and principal and the cooperation of everyone possible vas secured. Even the school janitor took time to let Bobby help him each day and name for him familiar objects as brooms, desks, chairs, etc. The principal and her secretary each took Bobby for five minute periods twice a day and let him explore the mysteries of the office, the school vault, etc. all the while naming objects over and over again. Upper grade girls were appointed to take Bobby on walks and to use simple verbs such as RUN, WALK, CLIMB, etc., while engaged in the activity named. In his own classroom Bobby was given a great deal of aural stimulation in the form of one word directions, listening to the phonograph (he was given the great honor of winding the phonograph which stimulated his interest and inspired him to better behavior) and numerous word games which his teacher invented for his benefit. I went to his building every day for six weeks and spent twenty minutes per day with him. At first we simply made infantile noises and engaged in vocal play. Gradually we listened for trains, planes, cars, trucks, birds, dogs, and even the teachers' voices as we walked around the school yard. We tried to locate the source of the sound to imitate and to name it—this game delighted Bobby and revealed to me how many sounds I had learned to ignore in the course of a few minutes. As in the case of the boy of sixteen who had no speech, about the only words other than simple nouns and verbs that were given right from the start were the question-asking words. Bobby's improvement far exceeded our hopes. Just before the close of school I heard him tell another child, "You shouldn't do that—you will scratch the table." Not only did Bobby learn to talk—he became a happy, well adjusted child in four and a half months, because he had been *taught to hear* and to understand at least a part of what he heard.

In conclusion I would like to suggest that perhaps most children would profit from being *taught to hear* and that reading and other skills would benefit greatly from *improved skill in hearing*.

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Division II

"Primary" Reading

"He has read well who has learnt that there is more to read outside books than in them."—From Thomas Hardy's "Pocketbook," November 29, 1875.

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READING PROBLEMS OF TECHNICAL TRAINING IN THE NAVAL AIR FORCE

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In this paper we take a look at the skills and understandings that must be acquired by those who fly, man, and service the aircraft of our Navy, and look upon them as a problem in *reading*. To train the thousands of pilots, crew members, mechanics, and the host of others necessary, our Navy has set up a gigantic program of training men "from scratch" in the intricacies of operating and maintaining naval aircraft. The results speak for themselves—as the Navy moves westward in the Pacific, spearheaded by the Naval Air Force.

To understand even slightly the wide variety and complexity of the skills that must be taught, we look upon the job to be done as one of teaching men to *read*. This kind of reading is more than perusing the printed word—it means anything from reading the sound of a motor in trouble to ascertaining the "lead" which a fighter pilot must give his guns in a deflection shot at an enemy bomber. In short, we can define *reading*, for our purposes, as *the total mass of skills and understandings that provides the means of gaining information upon which action is based.*

A member of a combat aircrew must do more than be able to read and reflect. He may have to gain the information, weigh it, and act upon it within a matter of a few seconds. A gunner cannot pore over the silhouette of an approaching plane, but must know at a glance whether it is friend or foe. A fighter pilot leading a section has only a few seconds to appraise a group of enemy aircraft and plan his attack. In short, training must provide for reading and subsequent action as a single integrated process.

To produce the trained men who man these planes the Navy has gone into education up to the hilt, and devotes a year and more to the task of training each man. Out of the experience of such a program it is inevitable that some conclusions of interest and value to public education can be drawn. It is the purpose of this paper to bring out one observer's conclusions based upon some experience with the training of carrier aircraft personnel.

As a preliminary, a sketch of the training program through which a combat aircrewman learns his job is necessary. The average embryo radioman or gunner is perhaps a high school graduate, often not that, and only comparatively rarely has he had some or all of a college education. He has probably never been in a plane more than a few times in his life, if at all; and it is *quite* certain that he has never fired a gun at anyone in his life. Aircraft engines, turrets, radio equipment, and bombs are something beyond his experience; and these are to become his daily diet.

Upon completion of preliminary indoctrination into Navy ways through "boot camp"—if he chooses and is selected, for the best are needed in combat aircraft—the man commences his actual training under the Naval

Air Technical Training Command. Here he learns about aircraft and the equipment they carry, and is further classified so that he is pointed toward becoming a gunner, a radioman, a mechanic, or one of many other ratings.

Certain training is given to all potential aircrewmen such as sending and receiving Morse code, recognition of our own and enemy ships, and aircraft gunnery. Much of the training is specialized according to the man's ultimate billet.

All this training is marked by the practical approach. The students learn through the constant use and handling of actual equipment. Great use is made of visual aids—motion pictures, slides and stripfilms, charts and cartoons, models and demonstration units. Elaborate synthetic devices provide a surprisingly real approximation to actual operations in the air.

The basic training is only a start. As it is all ground training, it can give only the background necessary to applying the skills to being a combat aircrewman. In the next phase, the man goes through Operational Training. There he is assigned to a particular type of aircraft, and he flies in that aircraft day in and day out. Here he joins with the pilots, who have recently completed their flight training and receive their commissions and wings as Naval Aviators. These now learn to become combat pilots, which entails learning to work with a crew as a team in the air, and the crew members learn to do in the air what they first learned to do on the ground. In addition, they learn the things that can only be learned by doing—how to relax during the near-vertical dive of a scout bomber, how to follow with a turret the high-speed motion of a fighter plane as it swoops down from overhead, how to handle a communication circuit with the noise of the motors only partially blanked out by the headset, how to move and work with heavy clothing and encumbering oxygen mask.

Operational Training is not all flying, however. Many phases of the ground training recently encountered in basic training are continued and expanded. Things that must be done in the air are continuously made familiar on the ground.

The conclusion of Operational Training finds the student ready to go into a squadron as a member of a flight crew. However, he is not yet ready to fight, for a squadron trains as a fighting unit for several months, and the crew member learns to work with his pilot and his fellows to form a team that will fight together. Indeed, it can be said that all that has gone before is but a preliminary to learning the trade of combat aircrewman; it is in the squadron that he really learns his job.

As before, his training takes place on the ground as well as in the air. He may be sent to special schools for advance training in specific skills, or for training on new and complex equipment heretofore not encountered. Or, when not flying, he may attend refresher classes conducted by experienced persons in the squadron. He will also spend long hours in the air practicing combat tactics with his pilot, and with other pilots and their crews in other planes, until teamwork is established.

There is no real end to training, for it continues throughout the combat life of a squadron. The tactics and procedures for aerial warfare are fluid and everchanging, so personnel must keep abreast of these changes—and ahead of the enemy in applying new tactics and counter-tactics. Equipment changes and is improved, and skills must not go rusty. So, even on a carrier at sea, for example, classes in code and recognition of planes go on;

synthetic trainers are used to keep the gunners' eyes sharp, and classes are held to show how to survive if forced down at sea or on a jungle island.

Training, then, is never really over for these aircrewmen; their career is simply another realization of the well-known maxim that "Education Is Life"—or vice-versa.

Through this long process of training our aircrewmen is learning to *read*, and he learns to read with *all his senses*, and he *must* learn to read with all his senses if he is to survive the rigorous test of battle in the air.

Let us look at some of the reading skills he and his pilot must acquire, outlined according to the various senses through which he gains information.

1. *The eyes.* As always, the eyes are the primary means of reading, but reading the printed word is only one part of visual reading, and largely a means to training, at that. The eyes are used to read instruments that may be simple dials or the intricate patterns of the cathode ray oscilloscope. The eyes are used to recognize friend from foe, to read the point of aim on an approaching fighter, to read the weather from the sky about, or the wind from the waves on the surface of the sea.

A pilot reads the course and altitude of his plane at night, or the condition of his engines, by reading and evaluating information from his instrument panel. He receives messages from other planes through hand signals, the dots and dashes of the blinker lamp, or the rocking of the wings of his section leader.

In training, the printed word has its important place, but it must be supplemented and implemented by pictures, charts, drawings, cartoons, and models. For in dealing with the practicalities of complex machinery, the printed word has strong limitations, and must serve as explanation and description of that which can also be seen, heard, and touched. The printed word, then, serves primarily to introduce, to supplement, and describe. The eyes, however, read from many sources other than the printed word.

2. *The ears.* The gathering of information from sounds, too, is reading, as typified by the standard response, when all is well, to a request for a check on a plane's radio, "Read you loud and clear." To the uninitiated ear, Morse code is but a series of meaningless "dits" and "dahs"; to a trained radioman it spells out a message just as surely as if spelled out in letters a foot high.

Slight variations in the sound of a motor spell out information to a mechanic, and the sound of the motor of a plane flying overhead is often sufficient to identify its type to the experienced ear.

All these sounds are learned through training and experience. They constitute a language as sure as the written word.

3. *Touch.* Pilots and crewmembers must know their controls and equipment *blindfolded!* War does not cease with the passing of daylight; at night many jobs must be done by touch alone. Even in daylight, the eyes must be focussed on the horizon, through a gunsight, or on an instrument panel; there is no time to use the eyes to guide the hands. The hands and feet, then, must be able to "read" independently of the eyes.

4. *Smell.* Even the sense of smell is a reading sense. It may announce the presence of fire before it is seen; or a leak in a gasoline line before its effect is otherwise noticed. And, needless to say, an aviator stranded in the jungle of the South Pacific finds himself reverting to the primitive where his sense of smell and taste is most useful.

5. *The deep visceral sensations.* These are the sensations that occur when the normal force of gravity is increased or lessened, as so often happens in an aircraft. The "heavy" feeling during the pull-out from a dive is felt throughout the body, and the extent of such is a rough measure of the steepness of the "pull-out."

The information the pilot gets from reading these sensations, however, is often false. These sensations can play tricks on the pilot, give him the sensation of being in a turn when he is straight and level, and other oddities. At night or in a fog, when there is no visible horizon, this is a real danger; a good instrument pilot knows he can read false information from these sensations, and ignores them accordingly, putting his faith in his instruments.

Learning to read the Navy way, then, is learning to concentrate all the senses on a single task. That it is done so well in such a comparatively short time, leads one to suspect that training methods found to work well in this case can be adapted to public education. These methods are not new in any sense, however; they have all been used before in education, but not with the same emphasis, the same intensity, or with the same motivation.

The printed word—and its language partner, the picture—is still a primary means of imparting education. The Navy uses an enormous number of text-books, instruction manuals, and pamphlets on every conceivable topic. Many have been poor, and those that have proved to be most successful are those that are *fully and well illustrated* and written in *simple and informal style.* This statement can be dismissed as obvious; however, the fact remains that the spur of necessity has produced textual material in the Armed Forces that far outstrips most of that produced in the field of public education.

One of the best examples of this type of material is the Navy Air Force's "Sense Manuals." In these manuals, cartoons and an informal, humorous style place them so high in readability that they largely provide their own motivation for learning. In these the traditional text-book style has been abandoned completely, with a result that is intriguing in its possibilities. The value of the humorous cartoon for educational purposes has long been known by the press, the propagandist, and the politician. The Armed Forces have found it a potent educational weapon; but its uses in the education of children have hardly begun to be explored.

Rapid strides, too, have been made in the intelligent use of photographic illustrations and drawings. These have long been used in textual material, of course. However, the lesson that has been learned—admittedly the hard way—is that the real dividends come from *quality and pertinence* in illustrations. Too much it has been tacitly assumed that a profusely illustrated text, per se, is an effective learning device. No mere numbers can overcome in a student his recognition of ineffective and carelessly chosen illustrations. He unconsciously judges a manual more by the effectiveness of its ilustrations than by the written text. It is time we became more critical of, and set higher standards for, the illustrative material in text-books.

The above discussion may seem nominally to apply to the problem of *learning from reading.* Actually it is equally applicable to *learning reading* itself; for the two are but different ways of speaking of the same process. Learning to read is more than learning words and their meanings; it is the total process of learning to gain ideas and information from the language symbols we use. This process is continuous and never-ending. So, if we

judge reading material by its effectiveness as a source of ideas and information, we are at the same time judging its effectiveness for learning to read.

Both the Army and the Navy have made and are now making a fabulous number of training films. Their use of this medium is on a scale far beyond what has ever been attempted in public education; and there are lessons to be learned. Much of the output has not been effective because the standards set were too low, the making of them was rushed, or the story told did not "hang together." We have seen many training films, good and bad, and can only conclude that a mediocre motion picture is not a learning device—it is merely a soporific. A few films of high quality are far more effective than many films of mixed quality. Again, quality pays enormous dividends—and quantity pays none at all.

All that has been said above applies with equal force to other visual aids —slides, strip films, posters and charts, and models. The quantity of such employed in an educational program is no measure of their effectiveness. Too often, indeed, it reflects the lack of imagination and the intellectual laziness of those who plan or carry out a program.

Learning to read with all the senses implies the necessity for realism in education, for "learning by doing." This is a harsh taskmaster for the public educator and tests to the utmost his imagination and ingenuity. The passive way of learning from books and pictures is a great temptation to which too many educators yield. The total ineffectiveness of such for training in the arts of war forced the armed forces to tackle this problem squarely. While many of the methods of combat training are not applicable to public education nor practical, there are some lessons to be learned, particularly in the field of science education.

First and most obvious is that the student must see, touch, and operate equipment and material about which he reads. Granted as a well-recognized principle of teaching, nevertheless too often we give it only "lip-service." And too often the physical materialization of the printed word or picture passes in review so briefly as to confuse as much as to help.

Particularly in the more technical aspects of Naval training, it is found that there is no substitute for hours spent in operating or dismantling and assembling. Coordination between the sense of touch and that of seeing and hearing—which is reading in its true sense—can only be learned through constant effort. Too often, as the child passes the block-building stage and begins to draw his information from the printed word, his education in "tactual" reading begins to be neglected. The "mechanical illiteracy" of too large a portion of our population testifies to the neglect of this important aspect of the teaching of reading. Equally important, however, is that the Armed Forces have been forced to teach, in some way, this type of reading to almost all of their personnel, and have succeeded to a most gratifying extent.

The success of the training given by the Navy to its aircrewmen can only be laid in part to methods and instructional personnel. Equally important is *motivation.* It may be thought that war provides its own motivation; this is true only to a very limited extent. For most persons war is an experience for which nothing in their previous life can prepare them. The necessity for learning combat skills in order to kill, or prevent being killed, is only truly learned in actual combat. Yet that motivation must be supplied insofar as is possible.

Motivation for learning is supplied through the usual methods of competition and recognition of achievement. It is further supplied by a continuous program of indoctrination for war, through motion pictures, written material, pictures, and the use of combat-experienced personnel as instructors when available. Whenever a learning situation can be set up that incorporates simulated combat conditions, this is done. This may be done through synthetic devices, or in simulated air-combat. *The necessity for the closest possible approach to realism in training is paramount.*

Motivation in public education is not the single-purpose phenomenon that it is in training for war. Nor is "realism" so easily defined. Yet the speed-up in learning that takes place in a strongly motivated program suggests that we can improve the education of youth through better motivation. This is already being evidenced by the employment of travel-study, supervised part-time experience in business and industry as part of a school program, active participation by a school in community projects. The employment of a strongly realistic approach to education is yet limited to those schools and systems in which the ingenuity and imagination of a particular administration or teacher provides the driving force. This approach has not yet become an integral part of the teaching profession as a whole.

This discussion, perhaps, seems to abandon the original topic of this paper—i. e., "reading." Let it be recalled, however, that we are putting a very broad interpretation on reading. Indeed, the definition of reading given earlier assumes that "reading" and "living" are quite synonymous. If we admit this, then we speak of "learning" rather than "learning to read." Such a concept of reading is by no means new, but it takes on new meaning when viewed in the light of war training. New possibilities for more realistic and meaningful educational experiences can be found in the experience of war. A new insight into the capacity of the human mind to learn under proper motivation is found.

It is important for education that methods and materials for learning developed in the pressure of war be not forgotten. They must be studied and evaluated for their educational applications and such development pushed forward through an even greater willingness on the part of educators to try new methods and materials than has been had in the past, and through the provision of necessary facilities and personnel to do the job. Every war brings as its aftermath a spurt in technological and industrial developments, a growth in our ability to grapple with human problems, and a better understanding of what makes a human being "tick." Lessons learned in this war can carry forward our educational program and knowledge of the learning process, but only if we are willing to look for these lessons, and willing to do the hard spade-work of applying them to peace time education.

SUPPLEMENTAL MATERIALS FOR INSTRUCTION ILLUSTRATED IN SCIENCE

C. Delmar Gray, District Superintendent, Escondido Union Elementary Schools

Word symbols are confusing to children. Perhaps one reason is because they are confusing to teachers. Two alternatives are suggested. One is that we develop such skillful techniques that what remains confused to us will be clear to those we teach. The other suggests that we eliminate confusion in our own thinking as one step to aid clear, concise, meaningful concepts for word symbols in the minds of children.

The use of nonverbal materials in teaching may have a two-fold function: one to provide expanding experience, and one to give clearly defined concepts for word symbols. There may be so much overlapping that both objectives merge into the same function.

When a person meets a new word symbol for the first time the experience associated therewith determines the meanings as of the time of meeting. Successive experiences tend to modify meaning. For illustration, we present the word "Butterfly" and at the same time show a colored slide of a butterfly. If no other experience has been provided the word means what the picture shows. The name of this first butterfly is "Monarch." Named in the order shown are: Slide 2—Cloudless Sulphur. Slide 3—Cloudless Sulphur. (But the two are different. The first is a female. The second is a male. Our initial concept of "butterfly" is rapidly expanding.)

Slide 4—Cloudless Sulphur. Slide 5—Gulf Frittilary. Slide 6—Underside of Gulf Frittilary. Slide 7—Cabbage butterfly. (Three spots instead of one on the fore wing and you have an alfalfa butterfly.)

Slide 8—Mourning cloak. Slides 9, 10, 11—Caterpillar, chrysalis, and adult Clouded Sulphur. Slide 12—Mounted specimen of a butterfly (not a picture). Slide 13—A live butterfly. How many references have been made to the word symbol "butterfly?" Each is different. Each is "butterfly." "Butterfly" now symbolizes a group of concepts.

Suppose we introduce a butterfly breaking from the chrysalis. It is still a butterfly. Was it any less a butterfly before the chrysalis is broken? Could we expand "butterfly" to include the caterpillar and egg?

When experience has broadened a specific word symbol into a generalization many concepts have been established. The word is again presented to the class. It is possible for the teacher to elect one point of reference and each member of the class to select another.

Could this be homogenized instruction? It could be so mixed up that no specific ever comes to the surface. Or could it be irradiated instruction? The spotlight, lacking focus, spreads over a multitude of concepts. Each individual elects his own point of reference. Confusion arises from the assumption that the word symbol limits the frame of reference to one concept.

Try projecting a picture that is slightly out of focus. That often illustrates the teacher's objective. Concepts expand as experience expands.

Generalizations from "butterfly" may include anatomy, species, life cycle, host plants, pest control, relation to temperature, climate, seasons, etc. Each successive experience re-defines the basic word symbol. Thus we approach word symbols spirally, from level to level as our horizon expands.

When the teacher approaches a class it must be, then, with the realization that there may be as many levels of concept for many word symbols in that lesson as there are persons in the class. Our function as teachers is to define what we mean by what we say at each successive level with sufficient clarity that a minimum of confusion will result.

What constitutes definition? We commonly define a word by reference and cross reference with the new word in reference to other words presumably already meaningful. The word "presumably" should be examined because in that presumption many normal children are discredited. If our presumption is correct, the words used to define a new word are based upon experience in the past that has provided meaning.

When words are not available to define words we must provide opportunity for meaning by experience. Thus, whether directly or indirectly, we depend upon experience.

If the word concept is tangible, meaning is established by an appeal to one or many sensory approaches to meaning. If the word concept is ideational, then ideational experience is essential. The point is that experience cannot be taken for granted.

In the academic, textbook subjects much is taken for granted. When a new word is encountered we are apt to say, "Look it up." Our fault is based upon too much faith in transfer of training. Granted that the words used to define a new word are known, the ideational concepts of implied relationships are above and beyond each word in content. According to McGeouch, *Psychology of Human Learning*, p. 446, transfer only takes place when the learner "sees into the fundamental relationships of a problem or has insight."

In science we take nothing for granted. We try to provide experience by which and through which words and combinations of words will have meaning. Primary science (regardless of the grade placement) is based upon understanding and appreciation of the environment. That, unfortunately, is a condemnation of science teaching, since at no level in the learning process do we find many students who give evidence of having been taught primary science. As a result we do not see understandingly or appreciate and enjoy the heritage that is ours.

If there are butterflies where you teach, then butterflies will provide a point of departure in science. I, personally, know of no community in Southern California where butterflies are not available. I have captured specimens in San Diego across the street from the Greyhound Bus garage in the industrial section.

Once a science interest is aroused, the environment expands from insects to flowers, soil, water, geology, earth, sun, planets, stars, constellations, universe, eternity; for eternity is but an expansion of time and distance. May I insert here a definition of eternity used by Van Loon?

> "Far in the North land is a huge rock a thousand miles long and a thousand miles wide and once every thousand years a little bird comes to sharpen his beak. When the rock shall have been

worn away by this process then will have passed one day of eternity."

Each is in sequence and logically related. To the extent that study is based upon understanding and appreciation of the environment all are primary science.

Perhaps here we might give a brief description of photography as a tool. The colored photographs were not made by a photographer looking for a subject but by a subject looking for a photograph. Any teacher who can follow directions can take pictures. Every school can make sets of slides in either black and white or color on 35 MM film, and color film is available now. Part of the process of learning is lost when commercial slides are used.

The bi-products are as worthy as the product. Children collected many of the specimens photographed. Many parents brought specimens and helped children to start personal collections. College students have mailed specimens back to us. Now and then the superintendent was caricatured in horn-rim spectacles and shorts cavorting over the countryside, net in hand, but over sixty children began personal collections and scores of others continue to bring specimens to the office each year. What if some child does crush a butterfly or a tarantula between an apple and a sandwich. His eyes are being opened to appreciations that may carry him from the load of the day to an enjoyment of the wonders of science throughout life.

The butterfly is only an illustration. If you are interested we can show you sets on airplanes, flower arrangements, desert life, tide pool life, transportation, commercial fishing, horses and cattle of the Pomona Fair, etc.

One factor is essential. The child should feel he is a part of the program. When he sees in pictures what others have helped to make, he thinks he can do something about that same subject. When he tries and sees his work projected before the class he knows he can do something.

Like the butterfly, photography is only an illustration. In science we try to provide experience. After sufficient growth through real experience, vicarious experience and eventually ideational word concepts have meaning to the reader. Thus we arrive at the point where experience from a number of past performances may be effectively applied to a new situation.

We said, "In science we try to provide experience." The word "try" is important because the motive, incentive, and set of the student are not always such as to make him receptive. We recommend that these factors be reviewed by reading some modern educational psychology. The aim, however, of the science teacher is to provide experience, and conversely to provide experience is the scientific approach to meaningful word symbols.

The teacher of beginning reading has the scientific approach but between the primary department and the laboratory science courses in the secondary school, and, the text-book courses in high school and college, we define words with words and give illustrations from the experience of others. Thus we have much poor teaching done by very conscientious, hard-working teachers. To push the truth any further might be to precipitate a storm on an otherwise peaceful scene so let's drop the subject and tell a story.

A breeder of fine horses developed his ranch so extensively that he had difficulty in identifying individual horses. He knew of course that each horse had a stall and that by opening the barn door every animal went to his own stall. He could then go from stall to stall instantly recognizing each

horse by his proper name. Naturally, he realized the importance of stalls, so he set to work improving them. Not being able to do all the work himself he brought crews of workmen to make each stall perfect. Then he always left the barn door open so the horses could come in at any time during the day. The scheme worked perfectly. He could go to each stall in turn and instantly recite the name, biography, and genealogy of every horse in the growing stable. He was very happy. Only one thing bothered him. With so much work going on (by stalling) the horses seldom came in. It seems that things of importance in horse nature were relegated to the background because the owner had no "horse sense."

We have challenged the effectiveness of book reading as a sole approach to a new field of experience. Primary teachers introduce objects or actions to establish concepts for objective word symbols. Auxiliary words might be taught directly but are introduced incidentally. For example, "the" apple, "an" orange. Relationships are ideational concepts some of which are presented as phrases. E. g., to the school, on the table, etc. As the ability to read is expanded, sentences, stories, and books may be devoted to ideational concepts.

As a result of reading technique do we still assume that new fields of content may be presented as ideational word concepts with meaning entirely through vicarious experience? The word "ball" is real to the child who sees, feels, and plays with the object "ball" before and during the introduction of the word.

We do realize the necessity of providing illustrative materials and as a result have developed "visual education centers." The term "visual education" has grown to symbolize the medium of expanding the printed word approach. "Visual education" is a limited term, referring only to looking at something. It may be a monochrome picture, a natural color picture, still or moving, or it may be seeing the object or activity either in or out of its natural and useful setting. As we approach the latter, the more nearly we approach reality and the less we depend upon vicarious experience.

Seeing is only one sense, and since scents are as real as sight why "visual education?" Feeling, hearing, tasting, and smelling are each as essential as seeing to complete understanding. The lowly garlic might work its way up in the estimation of the American to heights of prestige and esteem as in Italy, if education is only visual. Specimens of wood are identified by smelling and feeling when visual appearance is not always a distinguishing criterion. Kinesthesia, involving movement and manipulation, is essential in many laboratory experiences. "How does it work?" and "Let me do it," are important.

"Non-verbal experience" would appear to be a more inclusive term than "visual experience," as non-verbal materials are more inclusive. However, "non-verbal experience" is a limiting term. It is not so limiting as "visual experience," or, to use the more common term, "visual education."

Sound on film synchronized with moving pictures employs speaking. The use of recordings for language instruction is a proven aid in learning. Music appreciation is most certainly augmented by singing. Recordings of many occurrences which cannot be duplicated in the classroom are of decided value. Many fine radio programs in the future will be recorded for use at times appropriate to the school. Recorded for broadcast is evidence of reality. How much pupil enthusiasm is dampened by realizing the lesson

is not vital or alive but planned as a task for children in school! The time will doubtless come when recordings will be as much a part of the instructional aids as visual or non-verbal materials.

We tend to make the depository what the name implies. A person employed as a visual education director is likely to emphasize visual education. Teachers are apt to think the name implies what it says. Still "visual education" centers supply the supplemental aids for instruction.

May we return to our first paragraph? Word symbols are confusing to children. Perhaps one reason is because they are confusing to teachers. Shall we continue to perfect our techniques with such skill that what remains confused to us will be clear to those we teach, or shall we eliminate confusion in our own thinking as one step toward clear, concise, meaningful concepts for word symbols in the minds of children?

Why not say what we mean and mean what we say? Let us have "supplemental aids" instead of "visual education."

A CONCEPT OF SCIENCE AS "PRIMARY" READING

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In schools dominated by the literary tradition, all instruction described as science activity holds a precarious position. Since the development of the ability to read printed material is the objective of such schools, little quarter is given to subjects which are thought not to pertain directly to that process. The values derived from such reading, however, are often described as comprehensive, critical analysis, and sound judgment. In describing the development of such abilities we find it impossible to maintain this narrow concept of reading. Either the concept of reading must be broadened or it must be admitted that the process of reading is inadequate for the development of such qualities.

The student cannot develop the qualities necessary for critical thought through a consideration only of printed pages. He must have had previous experiences with actual phenomena which have made possible a thoughtful reaction to the figures which symbolize these or similar experiences. We are not justified in leaving such experiences outside the reading program. Unless reading is understood to function in all phases of living rather than with the printed page only, we shall have to abstract qualities from one phase of living in order to inject them into another. Unless there is a relationship to all the phases in the pattern of living, the unity of the individual cannot be maintained. It is the purpose of this paper to describe

how that relationship functions with reference to the phases of living that we call "science" and "reading."

The phase of reading that is "primary" to or precedes the reading of printed material has been most highly developed as the science process. The development of keen perception, critical thinking, and tested judgment has been more often associated with science activities than with any other. The most forceful way in which thinking has been developed to satisfy the intellectual and material needs of man has been according to the method of the science process.

Although the essentials of the science method are inherent in any thoughtful solution of a problem, the full implications of such a method have not often been seriously considered in educational procedures. The schools are pledged to teach reading as a tool with which all other learning shall be approached. Science has symbolized the antithesis of this process. Science approaches learning through the individual response to an environment of things and processes. Reading, it is supposed, carries on the social traditions through the medium of the printed page. It is not surprising, therefore, that science teaching in education is generally considered to be in reaction to the teaching of the tool subjects.

The development of a concept of science as a process which characterizes that phase of human behavior which may be defined as "primary" reading is based a different conception of the two terms of science and reading. These terms symbolize processes which are not essentially in opposition, but are complementary to each other.

Science is defined not as a particular body of knowledge or as a specialized technique for learning, but as the total process by which man has ever improved his knowledge of himself in his earth environment. Science is not a method or content which is the property of any one individual, but it is a continuous process of learning which involves not only an individual in his environment but also individuals within an environment. The science method may be analyzed as the way in which we determine the nature of things or phenomena that are commonly classed as belonging to the "natural" environment. The method of investigation will be found, however, to be governed by the individuals of a social environment. Therefore, it would be theoretically as well as physically impossible to separate the individual from his social as well as his natural environment in this or any other process. Science, then, will include an investigation of the social as well as the natural environment.

Reading is defined not only as the response of an individual to word stimuli, but also as the response of the individual to any stimulus which makes an experience meaningful. Meanings are developed by the individual in reaction with his environment. This environment is primarily and basically one of the phenomena which make up all life. An interpretation of the characteristics of this phenomena is the basis of all understandings in the reading as well as the science process. The perception of the properties of things belongs not only to the science process, but also to the reading process. The meaning which the reading of symbols has for the individual is developed from the primary reading of the original phenomena. Symbols may have meaning because the individual shares an environment in common with other individuals, not because the environment is originated by those symbols.

The science process is the reading process; that is, it is a process in which the reading of things and processes has been developed and refined to function not only in the education of one individual but also for the welfare of the many. The reading of phenomena is essential in the education of any individual. This reading achieves social aim and purpose as it is developed, refined, and controlled. The development of these qualities in reading has been the function of the science process.

Certain concepts have been developed as essential to the meaning of science. They provide the pattern upon which this mode of behavior is based. They represent an expression of the interacting forces of individual and environment in the learning process.

The first of these concepts is that learning is an individual process. Such a statement seems trite from use, but it has implications which are not always fully realized. It emphasizes the power of individual reasoning and judgment as contrasted with the theory that the individual is only the recipient of concluded knowledge. It emphasizes the nature of knowledge as being dynamic as it functions in individual thinking and use. Knowledge represents a state of adjustment in a solution of some problem, and is uncommunicable to others in its entirety since no two persons have exactly the same experiences. Knowledge cannot be static and acquired through acceptance by an individual. It must be proven to him through similar or related experiences. However, certain experiences have much in common and these common elements are crystallized into commonly accepted facts or a body of referential knowledge which is recorded in books.

The relationship of the science process to that part of the reading process which concerns the use of symbols may be explained by the relationship between knowledge gained from individual experience and the accumulation of this individual knowledge into a body of common or reference knowledge. Such knowledge is able to function in the learning process of another only as he conceives that phases of his own experience are related to those set forth on paper. The reading of symbols then becomes part of his environment for the solution of a new problem.

The concept of the individual in the learning process emphasizes the importance of individual development in order that his knowledge may become more mature and enriched both for the good of himself and his fellow beings. When the individual reads or interprets the nature of himself and his function with his environment, he exercises his individual powers of reasoning and thinking. He is reading an actual situation and the knowledge gained thereby is primary to any other forms of simulated experiences.

The second concept upon which the science process is based is the theory of sense perception. This theory is inseparable from that of individual learning, since it is the means whereby the individual comes in contact with his environment, but for the sake of analysis it has been considered separately. The theory of sense perception has often been set forth as the fundamental precept of science teaching and learning. Certainly it was the point of departure for a concept of learning as an individual's reaction with his environment as contrasted with the medieval theory of learning as being a revelation of truths which are inherent in the nature of matter and phenomena. In education this theory has ever been the signal for revolt, usually against the acceptance of traditional knowledge. The validity of

individual judgment has always been asserted by the theory of sense perception.

The theory is that through our senses we may perceive the nature of our environment. It has been stated, "Our contact with the universe is the source of all our knowledge."[1] Though it may be indirectly, this knowledge also gives us our insight concerning the nature of ourselves in our environment. Since the individual perceives primarily through his contact with his environment, the more opportunities there are for such experiences, the greater will be the potentialities for his learning. His experiences in education, therefore, are made possible through his perceptive abilities. The perception of actual experiences, rather than a recital of similar experiences through the symbols of communication, will be the basis for learning. Primary reading precedes and makes possible the secondary reading of books.

From this concept of sense perception has developed two divergent schools of thought regarding the function of science education in the schools. Each emphasizes one of the two phases of perception, observation or generalization. Observation has been the most important consideration with the "nature study" theory of science education. This school has demonstrated the value of constant relation with phenomena. The study of objects or things, however, is supposed to be accomplished with strict objectivity, without the influence of the impressions of a teacher or any other representative of social forces. The fallacy of this viewpoint is apparent, since such objectivity of observation is impossible. Schools of nature study were apt to be disorganized and impotent because of this tendency to disclaim all social relationships.

The second school of thought has been termed "the elementary science movement." It has emphasized the generalization phase of perception. The development of generalizations through perception provides us with the key by which to interpret all phenomena. There is greater opportunity for organization and direction with this approach to the nature of perception. The danger has been that such an organization tends to usurp the interest in the individual.

The theory of sense perception is based on the ability to compare one thing with another. Quantitative comparisons have been considered to be more reliable than comparisons of qualities, since concepts of time and space are conceived of in abstraction from a particular experience or individual. Measurement, therefore, has come to be considered the most objective system of comparison, and the science process, a system of thought based on measurement. This objectivity, in extreme form, has been the basis of a mechanistic theory of the world. Although knowledge is conceded to originate in individual perception, the individual becomes an instrument through which objective truths are to be revealed. The value of individual thought and reasoning is governed by its conformity to a pattern which is assumed to be the only possible interpretation of our world environment. Science teaching may thus develop into a rigid pattern of learning into which the student must fit. The teaching of systems of classification as an approach to science, and the dissemination of the "facts" of science are on a par with any other teaching of facts to be accepted rather than developed by the student. "Primary" reading has little interest or value to a student if his interpretations are to be restricted to a pattern of thought which is forced upon him.

The third concept upon which the science process is based is that of uniformity. "If we look for order in nature we will find it."[2] Sense perceptions tend to fall into order as relationships develop. The desire to put order into human experience is one of the greatest incentives to learning. We want to know why things behave as they do. When we make generalizations as to a possible explanation, we have organized our problem. Such generalizations are possible because we relate factors of the problems with similar factors known from previous experiences. The uniformity which we find in nature makes it possible for us to generalize.

When we make generalizations as to the solution of a problem, we have made the first step in any experiment, inside or outside a laboratory. This generalization is not accepted as the truth, but as a point from which to work for a solution. Tested observation verifies generalizations. Even though generalizations are proven in one instance, they are held tentatively, not as an end in themselves. They may be the means by which further solutions of increased verity may be sought. Thus generalizations have proven to be a marvelous means on which the pattern of thinking may be constructed. As long as this structure is considered to be complete for no individual at any time, creative thinking will always flourish.

Analysis is feasible because of uniformity in observation. The study of particulars may reveal implications of the whole because of the pattern of relationships. It is the significance of the part to the whole that is important in the selection of materials. Certainly when Bacon first expounded the theory of intensive versus extensive thinking, he gave great impetus and increased power to the functioning of individual perception.

The fourth and last of the concepts involved in the science process is that of standards of communication. If sense perception may be said to be the building material upon which the science process is based, and the theory of uniformity to supply the pattern of structure, standards of communication may be said to provide the binding material which holds the whole structure together. Comparisons in perception are made reference to standards which we have set up as criteria. Thus the judgment of one is checked by the agreement of many upon a similar subject. Generalizations are made from a common point of reference and thus organization is possible. Communication would be impossible without agreement upon reference points.

This concept puts a premium upon an understanding of the nature of comparisons, the purpose of the type of standards used, and the implications of the generalizations conceived. Such an understanding is achieved through the reading of the problem as it actually occurs in life rather than through another's interpretation of what has or should happen. In order that children have a basis for the knowledge referred to in our books, we must allow them to have insight into the processes which made these books possible.

These phases of observation, generalization, organization, and communication, which have been described in reference to the science process, are common to some degree in all of life's learning experiences. They are part of our curriculum; they have provided us with the knowledge which we are so concerned about in our teaching. The difficulty seems to be that in educational procedures we often try to take a shortcut to the path of knowledge. It seems so obvious that the many generalities which we have learned and accepted are true. Therefore, why will not our students accept

them without further ado. But in doing so they are robbed of their right to learn about these things themselves; to find out for themselves how it was that they came to be so accepted.

It is impossible and unnecessary that children must go through all the experiences that have resulted in our present civilization. There is much repetition in all phases of life. Because of relationships deduction as well as induction is a valid method towards a conclusion. Perhaps the difficulty in curriculum formation is not the problem of encompassing all points of knowledge, but in choosing its most significant elements. Significance will have to maintain a balance between immediate interest and long range goals. The science process is one which builds the future upon the past. It has been said that "today the human meaning of these sciences (physics and chemistry) is being stressed, so that science will no longer be considered a chamber of horrors of high-speed destruction or a palace of marvels of plastics or streamlining."[3]

It is this "human" side that is fundamental in any curriculum. The significance of all learning materials is based upon the relationship which they have to previous experiences and the intent with which they are to be used in future experiences. This interpreting process has been more highly refined and more deliberately set up as a science experience than as any other. To relegate science experiences to a small fraction of educational procedures as suitable only in the interpretation of experiences set up with so-called objectivity, is unreasonable and harmful. The student is being denied the right to learn to make his reactions more discriminating, more purposeful, more valid. The science process is a process whereby the individual learns for himself the nature of phenomena and relates it to his life.

Although the way in which this may be done has been described as the science process, the reading process has been described also. Observation, generalizations, and recognition of standards of communication are phases of reading, whether we read books or things. The qualities that we wish to develop from reading can be developed if we will relate reading to all phases of living rather than to one. In so doing there will not only be increased skill in the interpretation of meanings that are perceived both in a page and in the things which surround us, but also there will be growth in the individual who has read.

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[2]Jordan, David Starr, *The Care and Culture of Men.* The Whitaker and Ray Co., San Francisco, 1896, page 173.

[3]Ritchie, A. D., *Scientific Method.* Harcourt, Brace & Co., 1923, page 93.

[3]Edman, Irwin, "Which Road for Education?" *New York Times Magazine,* July 2, 1944, page 45.

BUILDING CONCEPTS IN MAP READING

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In recent years most of us have been sent more than once to our maps or atlas to consider some new territory brought into focus by global warfare. The vital part of air power in winning the war has attracted the attention of many to the potentialities of third dimensional travel in peace. Increased facilitation in transportation of goods and peoples is suggested through universality of movement and speed of air travel, and it is these factors that suggest promise of development of new areas of the earth and new routes to already developed areas. A society geared to third dimensional travel calls for re-orientation of our geographical thinking, and teachers are beginning to recognize the importance of map reading for adequate orientation in an air age.

The use of maps as "teaching aids" is not new to the school program, but the implications of air travel have caused some teachers to recognize their own illiteracy in map reading, and have suggested the importance of a systematic developmental program in this aspect of reading. That many teachers are illiterate in this area, and that such a systematic developmental program has not been followed, is evident in the following typical example:

A sixth grade class was studying Chile, and for the purpose of instruction the teacher had on display a large map of the world. One wide-awake boy was studying this map when he suddenly became aware of an apparent discrepancy. Chile appeared too large! He had learned some facts regarding the size of Chile, and an attempt to apply the scale of the map revealed that, according to the map, Chile was much larger than he knew it to be. He believed that the map-maker had made an error and reported his "discovery" to his teacher. Seizing upon the opportunity to correlate some arithmetic with social studies, the teacher suggested that the boy measure Chile on the map and apply the scale. The boy accepted the challenge with enthusiasm, and soon proudly reported that his suspicion had been well grounded, for Chile was too big. The teacher told him to measure again for accuracy, and once more the boy proceeded with the greatest of care to measure the map. He returned in a short while, having confirmed his previous measurements, completely convinced that the map was wrong. At this point, the teacher revealed her illiteracy in map reading and failed as a teacher to provide adequate direction to the learning experience, for she suggested that the matter be dropped because it was apparent that the boy could not measure accurately enough to apply the scale without error.

The problem involved in this incident was clearly one of map reading. There had been no mistake in the construction of the map, and it was not inability of accurate measurement that had caused the difficulty. It was a lack of understanding upon the part of the student and the teacher that made it impossible for them competently to read this map. Neither of them was familiar with the fundamental ideas upon which maps are constructed, nor were they aware of the limitations that necessarily accompany all flat maps.

Maps, like printed word symbols, are symbols for ideas. The function

of a map is that of expression. A map exists for the purpose of communication of ideas just as surely as do printed word symbols, and, as in the reading of printed word symbols, communication of the ideas expressed on a map is dependent upon the reader's fund of recallable experiences. The map reader must first of all be a reader of things, and secondly he must be familiar with the language of the map-maker. That is, he must be familiar with the fundamental ideas of map construction and aware of the principles which govern the map-maker in his task of expression of these ideas.

It is sometimes said that maps speak a universal language and that through graphic representation the limitations of a single tongue can be avoided. Thus the message of the map-maker is communicated to men of all tongues who have learned to read maps. Widespread use of maps for communication of ideas with regard for great areas has led to the standardization and systemization of methods of expression of the fundamental ideas with which all maps deal, and it is important that the reader be familiar with these systems and with the bases upon which such standardizations rest. A brief review of the history of cartography may serve to illustrate the growth that has taken place in increased facility of expression through maps, and the corresponding systemization that has accompanied widespread use of maps.

The earliest known map is believed to date as early as 2500 B. C. It is a small clay tablet, no larger than the palm of the hand. Upon it are depicted rivers, certain land features, and indications of centers of population. It is a map of a very small area, and is undoubtedly based upon the map-maker's observations of his own part of the world. The fundamental ideas with which that map deals are pattern, position, direction, and distance. By pattern is meant the expression of that which exists in the area mapped, i. e. rivers, mountains, centers of population, etc. To be sure, the total pattern for the area mapped is not expressed, but those aspects of the pattern which are of concern to the map-maker are included and are made more communicable because of their selective character. By position is meant the location of the objects of pattern. Direction refers to relative position, and distances are expressed in terms of what the map-maker knew of relative position.

The first known map was made many hundreds of years before man had clarified his concept of the size and shape of the earth. It was made before man had defined such directions as North, East, South, or West, and before latitude and longitude were a part of his method of expression. Yet this map dealt with the same fundamental ideas that are dealt with in maps of today, and served the same fundamental purposes that maps today are designed to serve. The fact that early maps were effective as a means of communication is evident in their persistence throughout the ages and in the constant struggle for their improvement and refinement through standardization.

Ionian Greek philosophers conceived of the earth as a wafer-shaped disc floating in a great ocean-river with the Mediterranean Sea located in the center of the world. Their maps expressed these ideas with regard for pattern, position, direction, and distance. The center of the map was the location for Greece. Early Chinese maps depicted China in the center of the mapped area, and indeed it was characteristic of early cartographers everywhere to locate their own part of the world in the center of the map. Many

early maps were "oriented" to the East rather than to the North, and thus we find that East, the direction of the rising sun, was placed at the top of the map.

The basis upon which systemization of expression of direction, position, and distance was developed, perhaps, was achieved by early Egyptian civilization. This civilization developed the calendar, and in their refinement of the reckoning of time they laid the foundation for a means of standardization of direction and definition of position. It is a curious thing to note, that in order to define more accurately his position on the earth it was necessary for man to project himself into space and thus locate himself on the surface of the earth in relation to the sun and stars. Latitude and longitude as a system of identification of position of stars in the celestial sphere were developed before they were adopted for use in definition of position on the earth.

The concept of a spherical-shaped earth was held as early as 350 B. C. by Greek philosophers. Cretes constructed a globe of the earth as early as 150 B. C. The sphere was held by these philosophers to be the ideal shape. The heavens had long been conceived as spherical in shape, and there seemed to be no reason why the earth should not conform to the perfect shape also. Upon this reasoning, Cretes declared that there must exist upon the opposite side of the sphere large land masses to balance the continents known to exist. The existance of land areas on the opposite side would balance the globe, and so Cretes depicted two large continents there, although he had only his reasoning for his point of reference. The concept of a spherical-shaped earth made it possible to apply a system of latitude and longitude to the map in a manner different from that previously used. Cretes' globe was divided into seven zones north and south, and seven zones east and west.

Further refinement in measurement of distance, and hence definition of position and direction, was achieved when man began to attempt to measure the size of the earth. Again, it is interesting to note that in order to determine position of points on the globe, man projected himself into infinite space and identified positions in relation to heavenly bodies. Eratosthenes was the first to attempt to measure the size of the earth. He accepted the spherical shape of the earth as his working basis and observed the length of a shadow at two points which he believed to lie along the same meridian. By measuring the angle of the noon-day shadow at the northernmost point on the day of the year on which there was no shadow at the southernmost point, he was able to ascertain what portion of the circumference of the earth was represented by the distance between his two points of reference, and thus to calculate the size of the earth. The points of reference used by Eratosthenes for these experiments were Syene and Alexandria, believed to lie due north and south of one another, and believed to be about 5000 stadia apart. The conclusions of Eratosthenes were surprisingly accurate in terms of what we now know about the size of the earth. There were several obvious errors in his calculations, however, and others were led to make estimates of their own. The fact that the errors in the calculations of Eratosthenes balanced one another so well that his answer was less than 14 per cent in error for what we now know the size of the earth to be, was, of course, not so evident to his contemporaries. Poseidonius measured the zenith distance of the star Canopus at Alexandria and on the Island of Rhodes, situated roughly 350 miles north of the former. His measurements

were based upon the same principle as those of Eratosthenes, but his conclusions were very different. He concluded that the earth was approximately one-fourth smaller than we now know it to be.

The measurements of Poseidonius were accepted as a working basis by Ptolemy in his mathematical calculations for map projections. Ptolemy, who lived shortly after Christ, is sometimes referred to as "The Father of Cartography" because he recognized that a mathematical basis for projection of the globe onto a plane surface is necessary in the construction of a map. He realized that the globe cannot be flattened without distortion somewhere, and worked out a mathematical formula for the flattening of the globe which would preserve certain features desired for facile communication. Ptolemy made use of a geographic coordinate system in his calculations, and his adaptation of latitude and longitude is essentially the same as we use today. It is true, however, that he did not suggest the use of the same prime meridian as the one we now use. His great contribution to cartography was the refinement of our system of directions and means of defining position. It was not that he introduced any new ideas to be expressed through maps, but rather through refinement of direction and position he made for more accurate communication of these ideas. The fact that he adopted the measurements of Poseidonius for the size of the earth made Ptolemy's calculations of locations greatly in error. Perhaps this error was largely responsible for Columbus' courage when he sought to reach the East Indies via the Atlantic Ocean. It was the use of false figures in the calculations of the size of the world that made Ptolemy one of the greatest obstructionists in the forward movement of cartography, while at the same time his systemization of direction and position and mathematical calculations for map projections made him one of the greatest contributors in this field.

It has been pointed out that all maps deal with the expression of ideas of pattern, position, direction, and distance. These are fundamental in the consideration of *here* and *there*. Maps today usually express these relationships in terms of rather righly refined systemization of direction. This system is based upon social agreement. A place on the earth is where it is only because we agree to define it in such terms, and it is a given direction from another point of the earth only because we have agreed upon the definition of the given direction. Insight into the way in which the systems of direction and definition of position function in facilitating communication is achieved through understanding the characteristics and peculiarities of these systems.

The base direction in our system of directions is North. North as a direction differs in character from every other direction save South. North and South are similar in character in that each may be defined as the direction toward a given point on the surface of the sphere. Upon a sphere all points are equal in value to all other points. Hence, it was possible to locate the North Pole and the South Pole only through reference to the apparent motion of the stars as the earth turned on its axis. It is possible to arrive at the source of the direction North or South. One may travel north or south only so far and no farther. All other directions are defined in their angular relationship to North. Thus, the directions East and West, for example, are fundamentally different in character from directions North and South. East may be defined as the direction 90 degrees to the right of

North, and West may be defined as the direction 270 degrees to the right of North. There is no East Pole or West Pole, and it is, therefore, possible to travel east or west indefinitely. These peculiarities of our system of directions suggest fundamental characteristics of our system of geographic coordinates.

Lines of longitude may be defined as imaginary lines drawn upon the sphere to indicate directions North and South and to measure distances East and West. Because of the character of the directions North and South, all lines of longitude will converge at the two Poles, and because the lines of longitude represent the shortest distances between the two poles, each inscribes the arc of a great circle. Each, coincidentally, bears a constant relation to the center of the earth. Because the lines of longitude converge at the poles, the length of a degree of longitude will vary depending upon where it is measured.

Lines of latitude may be defined as imaginary lines drawn upon the sphere to indicate directions East or West, and to measure distances North or South of the Equator. Because of the definition of the directions East and West, lines of latitude will remain parallel one to the other, and none, save the Equator, will bear constant relationship to the center of the earth. Thus, it is apparent that every degree of latitude is equal in length to every other degree of latitude regardless of where upon the globe it is measured. It is also apparent that while a parallel of latitude indicates the direction from one point along a given parallel to another point along that same parallel, it does not represent the shortest distance between those two points, unless the two points lie along the Equator. It is further apparent that since latitude is measured northward and southward from the Equator, no point on the globe will be defined in terms of a greater number of degrees of latitude than 90 degrees.

Comprehension of our system of directions and the resulting system of geographic coordinates is dependent upon the concept of a spherical-shaped earth. Memorization of rules regarding the functions of latitude and longitude are not enough to insure facile communication of ideas expressed on maps. Definition of position rests upon the above considerations of the characteristics of directions, but in addition it rests upon further social agreement as to which of the lines of longitude and latitude will be used for base lines. Indeed, since the selection of the Prime Meridian was not an inherent part of the system of directions, it was one of the last things to be agreed upon. Comparatively recently, at a convention held in 1809, the Greenwich Meridian was agreed upon as the Prime Meridian.

The spherical shape of the earth creates definite problems for the map-maker. Standardization of directions and position facilitates expression of position, direction, or distance upon a plane surface, but does not enable facile communication of *all* of these fundamental ideas upon any one given map. Hence, in map-making, the map-maker will employ that projection which brings into bold relief that particular quality which he is primarily concerned to express. All plane surface maps contain some distortion in one or more of the fundamental ideas with which maps deal. The map-maker's task is to avoid distortion of the quality of his primary concern.

The map in question in the classroom incident earlier referred to was the Mercator Projection. It was originally projected in the year 1559 by a navigator named Gerard Kramer, or Mercator. He was primarily concerned

with preserving true angular relationships in order that the task of determining the direction of one point on the earth to another could be readily ascertained. In the margin of his map, he clarified his purpose when he stated, "Here is a map, and on it is drawn a straight line between two points. If you wish to travel from one place to another, follow this straight line, and you will arrive at your destination. You may get there sooner than you expect to, or you may not get there as soon as you expect to, but surely you will get there." The statement suggests that in order to achieve facile communication of true angular relationship, distortion in comparative sizes was accepted. Upon the Mercator Projection, a constant scale cannot be employed throughout the map. To read distances is more difficult than to read directions on the Mercator Projection. It does not mean that the Mercator map does not serve to express ideas of distance; it simply means that distortion has been accepted in this aspect, and that it is more difficult to read distances. It is possible to employ a sliding scale for the determination of distances, and indeed, every navigator is familiar with mid-latitude measurement as a means of determining distances.

To achieve facile expression of angular relationships, Mercator employed a cylinder as the developable surface for the projection of his map. The cylinder is presumed to be wrapped around the earth, tangent at the Equator. Lines of longitude are projected upon the wall of the cylinder, and thus appear as perpendicular, parallel, equidistant straight lines. Progressive east-west distortion is the result of this process of paralleling lines that converge on the globe. Corresponding north-south distortion is allowed in order to preserve the quality of true angular relationships. Thus, the parallels of latitude appear as horizontal, parallel, non-equidistant straight lines placed progressively farther apart away from the Equator. When the cylinder is rolled out flat, North is found across the entire top of the map, East is found along the entire right hand side of the map, South is found across the entire bottom of the map, and West is found along the entire left hand side of the map. Land areas and water areas retain essentially their true shapes, but distortion in size increases progressively toward the poles. The entire earth cannot be included on a Mercator "World Map." Obviously, the Mercator Map is most effective in the communication of ideas of direction from one point to another, or angular relationships. Upon the Mercator Map the United States looks like the United States, Alaska looks like Alaska, South America looks like South America, etc.

In the solution of problems of distance, those projections particularly designed to preserve the quality of size are more easily read. For example, the Lambert Conformal projection allows the use of a constant scale in measurement of distances. Directions are more difficult to determine. A single cone is used as the developable surface in the construction of the Lambert Conformal Projection and is presumed to intersect the earth at two standard parallels of latitude. For the construction of the Lambert Conformal Map of the United States, the parallels 30 degrees and 45 degrees North are used as standard parallels. The meridians are projected as straight lines which would converge at the apex of the cone presumed to be placed above the North Pole. Parallels of latitude appear as arcs of concentric circles, equally spaced. The projection is best suited for areas of comparatively limited North-South distances, and extended East-West distances. A

Lambert Conformal Projection of the United States, for example, contains less than .5 per cent error in scale throughout the map.

For areas limited in East-West direction and greater North-South direction, true distance can best be expressed through employing many cones as the developable surfaces for a given map. On the Poly Conic Projection, each cone is presumed to be tangent along a parallel. The parallels of latitude are equally spaced along the central meridian of the map and each parallel follows the curve of the base of a cone. Thus distortion in size is progressive east and west of the central meridian. By confining the projection to a narrow East-West area, little distortion in size is suffered. Upon the Poly Conic Projection the parallels of latitude appear as arcs of non-concentric circles equally spaced at the central meridian. The central meridian appears as a straight perpendicular line, while all other meridians appear as curved lines convex to the central meridian. It is obvious that while distances can be readily read from the Poly Conic Projection, directions are more difficult to read. Poly Conic maps are employed frequently as battle maps in military operations because of the facility in the reading of distances. Calculations for aiming heavy artillery are readily achieved from Poly Conic Projections because the projectile fired from the gun does not proceed in a line of constant direction.

In all problems of transportation of goods and peoples, problems of distances from one point to another are of concern to the navigator. The advent of steam power for ocean travel meant increased freedom in movement. It meant that trade winds no longer constituted a determining factor in the path a ship would make from one distant port to another. Consideration could be given to the desirability of more nearly following the path of the great circle. Air transportation has tremendous possibilities as a powerful social force because it has made possible the extension of the great circle route to inland ports. Universality of movement, coupled with increased speed, means decreased actual distance and tremendously decreased time distances. Maps are needed to depict the path of a great circle. Obviously the Mercator map cannot serve this purpose, as the arcs of great circles would appear as curved lines on this projection. The Lambert Conformal projection is also inadequate, as it represents a compromise in this regard, and the poly-conic projection would also distort the path of the great circle. A map especially designed to depict the arc of a great circle as a straight line is needed for facile communication of this phase of the problems of distance and direction.

The Gnomonic Projection is especially designed for this purpose. The developable surface used in the construction of the Gnomonic Projection is a plane held tangent at a given point on the surface of the sphere. The eye of the map-reader is presumed to be at the center of the earth. Since all great circles bear a constant relationship to the center of the earth, they would appear from this point as straight lines upon a plane held tangent to any point upon the surface of the sphere. Small circles (i. e. parallels of latitude) would appear from this point as curved lines. This fact is true because the planes of small circles would not pass through the center of the earth. The pattern which the geographic coordinates assume upon the Gnomonic Projection is dependent upon the point of tangency employed in the production of a particular Gnomonic Projection. For example, if the point of tangency is somewhere north of the equator, but south of the

North Pole, the meridians (arcs of great circles) will appear as straight lines, converging at the North Pole. The Equator (a great circle) will appear as a horizontal straight line, while the parallels of latitude (small circles) will appear as arcs of non-concentric circles, showing increasing curve away from the Equator. South of the Equator, the parallels of latitude will curve in the opposite direction.

If the Gnomonic Projection is projected from a point tangent to the Equator, the meridians will appear as perpendicular non-equidistant straight lines which are spaced progressively further apart away from the point of tangency. The Equator appears as a horizontal straight line in the center of the map, while the parallels of latitude appear as arcs of non-concentric circles concave to the Equator.

In the Polar Gnomonic Projection, the point of tangency is at one of the geographic poles. The meridians appear as straight lines converging at the pole in the center of the map, and the parallels of latitude appear as concentric circles spaced progressively further apart away from the point of tangency. Obviously, the Equator cannot be shown in the Polar Gnomonic Projection.

In all Gnomonic Projections, the quality of expressing the arc of a great circle as a straight line has been preserved. Distortion in size and shape has been accepted. Thus, while it is easy to determine the shortest possible path between two points, it is difficult to measure the distance.

Facility of movement through air travel increases the importance of great circle routes, but distortion of size and shape of land areas, which are inherent in the Gnomonic Projection, render the Gnomonic Projection somewhat ineffective in communicating ideas with regard for relative positions. Some of those interested in emphasizing the potentialities of air travel have sought to minimize distortion of size and shape through arbitrarily spacing parallels of latitude equidistantly along the meridians on a polar projection. The projection is a compromise, and suffers severe distortion in size and shape of areas located south of the Equator. The projection is known as the Azimuthal Equidistant Polar Projection, and is the basis for the so-called "Air Age Map."

Like the Gnomonic Projection, the Azimuthal Equidistant Projection may be projected from any point on the globe. A straight line drawn from any point on an Azimuthal Equidistant Projection to or through the point of tangency represents the arc of a great circle, and is easily measured for distance.

For the study of comparative sizes, Equal Area Maps have been projected. The primary purpose of the Equal Area Map is to preserve the quality of comparative size. Distortion in shape is accepted. Thus, such maps distort shape but retain comparative sizes. The "Orange Peel Map" with interrupted ocean areas is an example of this kind of map. Sometimes, to overcome confusion introduced by gaps in the map, comparative size in water areas is sacrificed, and distortion in ocean areas appears as the price for presenting the map in one piece.

The Siderial Equal Land Area Map is an example of a compromise made in order to preserve true size and shape of land areas. Upon a Siderial Projection, distortion in water areas is accepted, and thus the Pacific Ocean may appear no larger than the Atlantic, but continents retain essentially their true sizes and shapes.

Enough has been said about projections to indicate that one flat map cannot be expected to express equally well all the ideas with which maps deal. Each expresses more adequately certain relationships than does another. An important step in intelligent use of maps is the selection of a map projection which is designed to bring into bold relief those ideas and relationships with which the reader is primarily concerned.

The educational implications of what has been said regarding our system of directions and map projections are many. Perhaps the first is that the teacher realize the fundamental ideas with which maps deal, and that she understand the inherent characteristics of our systems of direction and geographic coordinates. Such understanding will assist her in providing the right sort of stimulation and direction in children's learning experiences in these areas. She will recognize that one map cannot do all things equally well, and will select that map best adapted for her particular purpose at a particular time. She will make use of many map projections and employ each as a means of communicating particular ideas with which she is primarily concerned.

Recognition of the ideas with which maps deal suggests that in map-reading, as in all reading, discriminative reaction is based upon immediate experiences with the phenomena symbolized on the map. The problem is one of progressive symbolization. Progressive symbolization implies that many first-hand experiences with problems of pattern, position, direction, and distance will precede refinement of these concepts to the degree of understanding the highly systematized means of expression employed in conventional projections. The phenomena of pattern, position, direction and distance are so much a part of behavior that the school cannot be the first to introduce the child to these experiences. They are a part of all his conscious behavior. As soon as a child is aware of the fact that he is in his crib, or in his mother's arms; as soon as he is aware that he is alone or with others; as soon as he learns the way from one part of his nursery to another, he is solving the same fundamental problems as those with which maps deal. When he learns the way to and from school; the way from one room to another in the school building; the way from home to the store, to the post office or dairy farm, he is refining his concepts of pattern, position, direction, and distance. When he becomes familiar with nearby mountains, rivers, buildings, etc., he is refining the basic concepts with which maps deal. When he becomes aware of the position of the sun in the morning or afternoon sky, he is refining his concepts to the degree that he is being introduced to the basis of our system of directions. The challenge is to provide the child with many such problems in such a way as to encourage him to become increasingly aware of things and of relationships among things; to become increasingly discriminative in his understanding of here and there, of far and near, of this way and that way. Symbolization for these ideas should deal with those aspects of his environment that are within his experience. For example, the greatest degree of discrimination in map-reading should first be achieved through work with simple maps of areas with which the student is well acquainted. A map of the school room which depicts the location of the door, windows, the teacher's desk, and other items of major concern to the student, should provide a sound basis for early symbolization of ideas of pattern, position, direction, and distance. Such maps serve to communicate the fundamental ideas with which all maps deal, and they do

so without reference to standardization of directions or geographic coordinates. They perhaps serve best for this purpose when the child has had a part in the construction of the map. Facility in reading is increased when the map is "oriented" by turning it in such a way that the pattern on the map corresponds to the actual pattern in the room, and reference to objects symbolized can readily be made.

The stress upon immediate experiences in the early grades does not imply that conventional map projections should be denied the child until he has developed complete understanding of our system of directions. Certainly, conventional map projections should be used by children whenever those projections can actually serve to facilitate communication of ideas. The point is that map projections will serve in early experiences to communicate only in very general terms some of the ideas basic to all maps. Refinement of concepts will mean increased power in ability to read maps. Early in the child's experience, he can read from maps that, for example, California is located near a large ocean. He can read from an equal-area map that California is larger than Oregon. Just what the ocean really is, or what is really meant in terms of the size of a given area, are meanings that are achieved through primary reading and can never be achieved through map-reading alone.

Since the system of directions is based upon a concept of a spherical-shaped earth, those experiences which assist the child in building the concept of a spherical earth are vital to a developmental program in map-reading. Shadow reckoning, observation of the setting sun, of stars in the night sky, of the appearance and disappearance of distant objects, and many other primary reading opportunities which strengthened the concept of the size and shape of the earth are a part of a developmental program in map-reading.

Use of the globe early in the school program probably is sound for purposes of communication in very general terms of certain global relationships. The use of the globe in higher grade levels is of value because of the increasing discrimination that can be achieved through its use. In both primary and upper grades, probably the most effective use of the globe can be made when it is free to be removed from its holder, and to be examined and "oriented" by the reader. To "orient" the globe, the poles are turned to point in the direction of the geographic poles, the axis of the globe is turned parallel with the axis of the earth, and the globe is rotated so that the reader's position is "on top" of the globe. Orientation of the globe in this way dramatizes relative position, and emphasizes the spherical shape of the earth without the difficult adjustment of the reader having to imagine himself "sticking out" on the side of the globe.

Opportunities for experimentation with the globe can do much in building understandings and insight into our system of directions, and into the nature and functions of our system of geographic coordinates. Any sperical object may serve to implement the development of an understanding of the need for a system of reference lines for identification of position upon the globe. If a plain white ball with a single dot marked upon it is given a child, he will soon discover that there is no way in which he can define the location of that point on the ball. As soon as two dots are marked upon the ball, however, one can be defined in terms of its position in relation to the other. As more dots are placed on the ball, it becomes apparent

that reference lines greatly facilitate definition of position. The reference lines are agreed upon by those engaging in the experiment, and a coordinate system based upon social agreement develops. These relationships are those basic to our system of directions and geographic coordinates. Insight into the nature of these systems means insight into their use.

It is important that somewhere in the elementary school program children have the opportunity to become acquainted with the language of the cartographer and with the basis upon which that language rests. Insight into the functions of the systems of direction and definition of position, however, can be achieved only to the degree that the individual has refined his concepts of the fundamental ideas with which maps deal. Because these phenomona are inherent in all behavior, they are subject to constant refinement. A systematic developmental program in map-reading will increase the individual's power in this area, but refinement of these concepts will continue throughout all conscious behavior, and through refinement the individual will increase his ability to read maps.

SAFETY: A PROBLEM IN READING

Marian Telford, National Safety Council, Chicago

97,500 killed. 10,100,000 injured. An economic loss of $5,000,000,000. Those figures, incomprehensible as they may be because of their very size, represent the nation's accident toll in 1943. Each of you will have to decide for himself whether, by definition, they can be said to represent a problem in reading, also; or whether or not through reading any attack can be made on this particular social problem.

When one examines the accident record to learn how they affect children and youth, certain facts become clear immediately,—clear in a rather terrible way if one has sufficient imagination to see what accidents mean in terms of human suffering and to recognize the accident facts as symptoms of failure of democratic society, a failure to live together with due regard for one another. Perhaps the most significant accident facts now confronting us are the following:

1. Among both sexes and all ages, only two diseases killed more than accidents killed in 1943. These were heart disease and cancer.
2. During the same year accidents killed more than were killed by any disease among children and youth between 2 and 28 years of age.
3. For the last several years, approximately one-third of *all* deaths

among children and youth between 5 and 19 years of age have been due to accidents.

4. Last year, the total death rate for all accidents in the United States was 72.3 per 100,000 population. In California it was 95.5. The total U. S. death rate for non-motor vehicle accidents was 54.9. In California it was 60.5. Though somewhat higher than the national record, the latter was considerably lower than that of any of the other Pacific Coast or Rocky Mountain states.
5. In 1943 there were fewer traffic accidents in which children were involved than during the previous year, but those accidents were more serious. The number of accidents to children of school age dropped from 11,888 in 1942 to 11,096 in 1943, but the number of children killed rose from 391 to 458.

Significant as these facts may be to anyone endeavoring to grasp the scope and characteristics of the accident problem, the factors contributing to the accidents are of greater importance. Some of these factors are rather difficult to analyze because very few, if any, accidents have a single contributing cause. Generally speaking, however, it can be said that individuals are involved in accidents because of bad attitudes, lack of information and skill, unfortunate environment, or the careless acts of others over whom they have no control. The safety movement is developing a "patter" of its own to describe the situation but for purposes of this informal discussion, it may be profitable to approach the problem from these points of view: Children and youth are involved in accidents because of (1) home environment, (2) the manner in which they reach school, (3) the kind of schools in which they spend their time, (4) the place and manner in which they play and, (5) the work they do, if any. Examining each of these in turn we find the following:

HOME ENVIRONMENT: The ranking types of home accident fatalities are falls, burns, poisons, mechanical suffocation, and firearms. Two out of three home accident fatalities are of just two types, falls and burns. People are injured at home because of the kinds of houses in which they live—they're poorly constructed, poorly furnished, poorly lighted, etc.,—or because a satisfactory physical environment is inhabited by thoughtless, careless individuals. To those who like to think of a home as the place to which every member of the family can return for comfort and understanding, the most tragic accident reports are those dealing with the deaths of infants and children and marked "adult error—child not at fault."

GETTING TO SCHOOL: The majority of children walk to school. They need instruction—preferably from their parents AND their teachers —on where and how to cross the street; on the importance of walking on the left side of the highway facing oncoming traffic if there are no sidewalks; on the wisdom of selecting the safest route if one is provided with protective devices—lights, traffic officers, pedestrian subways, etc.,—and another is not. Some arrive on bicycles, and they must learn the satisfactions that come from sharing the use of the highways with others. One out of six of all children enrolled in an elementary or secondary school in the United States arrives in a bus owned or contracted for by a board of education, and for their safety there must be good buses, competent drivers, and safe operating practices. When the war is over, secondary school youngsters

will be driving to school in vehicles of every type. It would seem that they have a right to an opportunity to learn how to become skillful drivers. That many of them are such has been true always; that many of them are not is indicated by special studies indicating that the highest accident records are for drivers under 20 and over 50 years of age.

THE SCHOOL: The National Safety Council receives accident reports from various school systems with a total enrollment of nearly a million pupils. Only accidents sufficiently serious to result in absence from school for a half day or more or which require a doctor's services are reported. These reports are classified in various ways. When studied in an effort to find out where children were when they were involved in accidents, it was found that 25 per cent were in the school building, 19 per cent on the school grounds, 8 per cent en route to school, 18 per cent were at home, and 30 per cent were away from both home and school. Further analysis shows that of those accidents occurring within school buildings 35 per cent were in the gymnasiums, while nearly one-half of those mishaps occurring to pupils on school grounds were to those engaged in unorganized and unsupervised play. More accidents occur to seventh grade pupils than to those of any other grade.

PLAY AND RECREATION: To safeguard children and youth during play and recreation requires the provision of adequate play space, space sufficiently attractive that children will use it in preference to the street or other play areas, the proper selection of playground equipment, and the training of pupils to engage successfully in whatever games and sports interest them.

SAFEGUARDING THE YOUTHFUL WORKER: As a result of the war there has been an influx of youthful workers into many occupations previously reserved for adults. A great effort is being put forth to protect them. Under the Fair Labor Standards Act of 1938 the U. S. Children's Bureau has established definite restrictions concerning the types of industrial establishments in which youth may be employed. In general, employers of youth are urged to select the duties they are allowed to perform with due regard for the capacities and limitations of individual youth, to provide adequate pre-service training and continuous supervision on the job.

The teacher has an opportunity to aid in the solution of the social problem outlined above. Willingly or otherwise the teacher must face the fact that he teaches safety—or fails to do so—by his own conduct: the way in which he crosses the street, the way in which he drives his car, the way in which he uses a pair of scissors. For his guidance, three committees of the National Safety Council prepared a self-check safety survey; forty-eight administrators, teachers, and college professors worked on the survey. This survey is attached. Its use is recommended to you.

A SELF CHECK SAFETY SURVEY FOR ELEMENTARY SCHOOL TEACHERS

To the Teacher:

The following questions cover the major points of the safety curriculum at the elementary school level. They are divided into two parts: Part I deals with your work with the pupils; Part II deals with yourself as a person—a matter which is as important, in its effect on the pupils, as what you teach.

Read each question and decide how frequently an answer of "yes"

would honestly picture your actions. Indicate your opinion by the following symbols:

1. I believe my actions are satisfactory in this regard.
2. I am not sure about my actions—must pay particular attention to this point.
3. I am decidedly weak in this area—should seek help in order to reach this goal.

There is no score to this test. It is merely an attempt to help you look at yourself as a teacher of safety and to stimulate you to thought and action on some of these points.

The questions have been carefully checked by forty-eight teachers, administrators, and college professors interested in safety education. These persons agreed that if you can honestly answer "yes" to all the questions, your safety curriculum will be well started on the way to becoming truly functional.

PART I

1. Do your pupils aid in devising and enforcing their own safety rules?

2. Do you keep a record of all accidents occurring to your pupils, regardless of whether they occur at school or elsewhere?

3. Do you analyze these accidents and on this analysis base changes in your instructional program? In the school environment? In recommending the elimination of hazards in home and community?

4. Do you base your safety curriculum on the safety needs of each pupil as determined by:

   a. An analysis of the environment in which he lives, including the type of home; the hazards of the school; the traffic hazards; the recreational hazards; the physical and climatic characteristics of the community; and the hazards of the native flora and fauna?

   b. An analysis of the knowledge and skills already acquired by the pupil and the attitudes he possesses?

   c. An analysis of the pupil's personality as it relates to safety—fearful, over-cautious, show-off, careless, shy, etc.?

   d. An analysis of the pupil's health handicaps which relate to safety—poor eyesight, poor coordination, general weakness, specific deformities, etc.?

5. Are you conscious of safety as *one* value in *every* class situation? (Note: Pupil-consciousness is not always necessary or desirable; teacher consciousness is.)

6. Do you consider all phases of safety when considering emphases for your safety curriculum? Phases of safety which may be important at the elementary level are: home, school, pedestrian, bicycle, recreational, fire, farm, vocational, transportation and public.

7. Do you make an effort to tie your safety work in with that of the entire school—the safety experiences your pupils have had and those they are likely to have, the safety council, the bicycle club, the safety patrol, etc.?

8. Do you make discriminating use of the safety resources of school

and community; teachers, pupils or parents with special interests; fire and police departments, opportunities for excursions, etc.?

9. Do you make discriminating use of the variety of instructional materials available—motion pictures, film strips, lantern slides, posters, radio programs, dramatizations, excursions, reference material, reading material, etc.?

10. Do you allow an enriched school curriculum, including the normal minor hazards, in order that the pupils may face the ordinary situations that call for the development of safety habits?

11. Does the evaluation of the results of your safety instruction include the observations of pupil behavior in situations allowing for safe or unsafe actions?

PART II

12. Do you ordinarily live up to safety principles which you endeavor to teach your pupils?

13. Do you make an attempt to instill in your pupils a feeling of security? For example, are you calm rather than nervous? Do you face difficult situations with poise?

14. Do you feel reasonably sure that you are acquainted with the best materials in safety education, including recent publications?

15. Do you know where you can receive help with your safety teaching problems?

16. Do you consider it your responsibility to be consciously on the alert for hazards to pupils in school and community?

17. Do you live up to your responsibilities as a citizen in regard to safety in such situations as: strictly observing safety practices on your own property; in the street and in other public places; supporting public officials and projects which will improve the safety of the community; taking responsibility for spreading safety information; and reporting hazardous conditions?

Division III

The Publisher's View Of The Implementation Of Reading Instruction

"Only that reading program has value which gives our children direct guidance in using the many types of reading demanded by our complicated civilization."

Lillian Gray—Eighth Yearbook Claremont Colleges Reading Conference

BRIDGING THE GAP INTO THE LIBRARY

Mrs. Lillian A. Downey, Educational Consultant, D. C. Heath & Co., San Francisco; Formerly Instructor, University of Minnesota, Columbia University, and Broadoaks School, Pasadena

Learning to read is a development process. In the intermediate grades learnings are further growths of what was begun in the primary grades. To assume that the child has learned to read when he reaches fourth grade is a great fallacy and directly responsible for the excessive amount of so-called Remedial Reading in the schools today.

Too often children are thrown into the field of Wide Reading before being led into it through their existing interests and abilities. They have to be taught to select, to read, to appreciate. During these grades children gain in the use of certain skills as well as in the mastery of certain skills. It is a continuation program that was begun in the primary grades.

If the child does not know the use of certain skills, he must be taught them whether they be in word recognition, thought organization, use of an index, or selection of material. After learning the use, gains in mastery take place with greater consciousness on the part of the child upon his own needs. Background for interpretation is enlarged with more done by the child than background built by the teacher. The child should become conscious of his own needs, whether they be in use of table of contents or any of the organization skills. Independence is gained in word recognition through continuation of a phonics or thought analysis program. His interests are to be enlarged and tastes in reading improved. He puts reading to test in Arithmetic, Science, and Literature.

Too often children are expected to use single copies of library books before they know how to use them either for enjoyment or information. Well planned and selected materials, such as the Reading for Interest series, help to bridge the gap for the use of the individual book or library reading. It is oftentimes advantageous for a group to use copies of the same book for the purpose of comparison, talking about the same thing, referring to things they can read about in common. Again, it gives the teacher the chance to guide the children into use of single copies, into the understanding and appreciation of good authors, good illustrators, and steering them to interests that will grow and develop in the children's lives.

We must not only develop *Interest* but *Tastes* for good literature. True, the child may have an interest for *Adventure* but his taste may be the kind of adventure found only in the comics. Schools have failed in developing these permanent interests and tastes. It is astounding to hear of the number of comic magazines bought each week by children. Children are chasing aimlessly around these days instead of utilizing the library opportunities for reading. Bond and Bond says, "Schools must place a greater emphasis on a positive program of developing worthwhile and lasting reading interests and tastes."[1]

Children are not always conscious of the interests they have. Teachers

often assume them to be an aeroplane interest. This is not always true. There must be systematic sampling along all lines,—adventure, folklore, biography, animals, science, history, travel, and humor. There must also be a sampling of writings by authors we wish children to know, such as Elizabeth Coatsworth, Erick Berry, Armstrong Sperry, Andrew Lang, Ellis Credle, the Brothers Grimm, Walter de la Mare, Rachel Field, Robert Louis Stevenson, Ralph Bergengren, Laura Richards, Charles Finger, and William Wordsworth.

The Reading for Interest series acquaints the child with all these fields and with all the best known authors and poets of yesterday and today. Contemporary authors include Newberry and Pulitzer prize winners and juvenile writers who give first-hand experience with life in all parts of the world. The child is helped to know these people through biographies given in the Reading for Interest—General Mauual. In this manual are also found charts which tie-up the *interests* in the story with the *curriculum themes* and the literary *experiences*. These literary experiences follow the pattern set by The National Council of Teachers of English in the five areas of literature experiences emphasized for progressive development in elementary schools. Facts are often forgotten but these literary "feels" and attitudes persist.

Reading for Interest has above everything else literary integrity. Beautiful style is a striking feature of the stories. Even the material of a factual nature has good literary style. All the elements of true literature that appeal to children are abundant, namely: plot, action, suspense, drama, humor, fantasy, imagination; literary appreciation of people, places, and events; stimulation for the enjoyment of poetry and for the sights and sounds of the world around them.

It would be nice if all children naturally liked good literature. We have to lead on from their present interests and tastes and build on what they like. Fun and Frolic, illustrated by Emma Brock, is filled with humor, funny stories, funny pictures, and funny sound effects, such as one finds in the story "Ebenezer Never Could Sneezer" and the poem "There Once Was a Puffin". Each story written by worthwhile juvenile writers such as Elizabeth Coatsworth, Margaret Wise Brown, Gilbert Pattillo, etc., being filled with humor, leads away from the cheap humor found in comics. In the same way the beautifully written Walt Disney books carry the children into realms of fun but on toward better literature by well-known children's writers such as Caroline Emerson and Idella Purnell.

Animal interests grow from Ellis Credle's story "The Goat Who Went to School" from *Luck and Pluck,* to other animal stories which later find outlet in the library in Osa Johnson's stories and Kipling's Jungle Book. "Animals Brave and Wise," a unit of animal stories in *The Brave and the Free,* lead to the reading of true animal stories which were recently published in the Reader's Digest.

Children grow to appreciate these writers, to feel they know them, and soon recognize Grace Moon as a writer of stories of the Southwest Indian; Nora Burglon, of splendid Scandinavian stories; Erick Berry, of thrilling African tales; and Caroline Emerson, of Colonial stories—all of which they enjoy. They go to the library knowing their favorite authors, seeking books they enjoy, and being discriminate about authorship and artistry of reading materials.

Poetry is included in each book. Sometimes the poems present them-

selves with the holidays, as in *Luck and Pluck*. Sometimes the poem gives the background and interest appeal for the story to follow, as Rachel Field's poem "For Christmas," which is followed by the story "The Christmas Promise" (page 407, *Merry Hearts and Bold*). The poem "P. T. Barnum" by Rosemary and Stephen Benet, gives the background for the story, "Barnum's First Circus" (page 322, *The Brave and the Free*). "The Wilderness Cow," a poem by Elizabeth Coatsworth is superseded by the story "The Puritan Cat," which gives the Colonial setting for the appreciation of the poem (page 230, *Merry Hearts and Bold*). The poems, "Boy Washington" and "Clara Barton," written by Mildred Meigs and Rosemary Benet, found in *The Brave and the Free*, are extremely apt for the present time.

Literature is one of the best ways to prepare children for a world society, for in literature there is the *feel* of kinship, whereas in factual material we constantly check with realities and authenticities.

Merry Hearts and Bold gives us stories of China, Norway, Australia, Turkey, Switzerland, Arabia, Holland, Africa, the South Pacific, and London. The unit "Working and Winning" in *Brave and Free*, gives to the child stories he likes and underlying them all, true democratic ideals.

Witty and Kopel says, "Thus, the reading problem is seen not as an isolated issue, but instead as one inextricably related to that of improvement in the general cultural pattern of modern life."[2]

"Reading in the library corner or library is an integral part of a program which aims to teach children to be self-reliant and to set up standards of judgment for themselves. Wise teachers and librarians know that reading a book which results in sheer joy to the reader is a valuable experience" (General Manual, p. 42, Reading for Interest Series).

"Books are keys to wisdom's treasure;
Books are gates to lands of pleasure;
Books are paths that upward lead;
Books are friends. Come let us read."

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[1]Bond and Bond, Teaching Children to Read, MacMillan Co., New York, 1943, pp. 293-294.
[2]Witty and Kopel, Reading and the Educative Process, Ginn and Company, N. Y., 1939, p. 8.

"READING FOR INTEREST" MANUALS

Grades 4-5-6

Linguistic, artistic, and dramatic activities stimulate and lead to permanent interests in reading.

1. *Library Corner*: Attractive, comfortable for reading, with interesting display shelf for books selected by the teacher.

2. *Card-Catalog*: Listings of stories children find in various books classified by interest centers and authors.

3. *Murals, Friezes*: Illustration of stories read. Chronological events, incidents, and historical background.

4. *Puppets and Puppet Shows*: Sometimes a sequel written for story read.

5. *Movies*: Illustrative, made by children.

6. *Dramatization*: Helps in the realization of the concreteness of lit-

erature. If children are led and not forced to enjoy dramatization, they will feel and express it in their own way.

7. Characterizations: Stories of characters. "I'd like to be Sir William who did this or that."

8. Radio Program: Book Reviews given. Quiz programs on certain books and authors.

9. Program: "Guess Who I Am" programs children like.

10. Book Reports: Should be simple. Name of story and author in card file. Children add one sentence reports to it.

11. Panel Discussion: Note guidance given in Reading for Interest Manuals.

12. Debates: For predicting outcomes. Appraisal is for older, mature children.

13. Story-telling: Incidents our soldiers tell from returned countries develop into reading tales from *Merry Hearts and Bold*.

14. Literary Maps: Show placement for story background.

15. Oral Reading: Reading and re-reading, especially poetry. Teacher or child reads part of story to be silently read later by children.

16. Story Hour: Informal. Child says, "What do you think of my choice?" "I think you will like this because." Use high standards—follow through—well-planned, so they are not just "talky".

17. Book Record: Valuable for child to see his own name amongst books read.

18. Bulletin Board: For pictures, book jackets, excerpts from certain books or stories, newspaper clippings about authors, etc.

Illustrations for the above as well as other activities are given in the *Reading for Interest Grade Manuals* under the title Related Activities. Help for each lesson is concisely given: Setting the Plot and Interesting Features enable the teacher to grasp quickly the story content without reading the story in the book. Readiness for Understanding is given for each lesson, followed by Suggested Procedures for handling the lesson. Seatwork problems are alleviated by suggestions given in these manuals as well as wide reading suggestions for further library reading.

FINDING AND USING MATERIAL AIDED BY "READING FOR INTEREST" MANUALS AND PRACTICE BOOKS

Though a child may be stimulated with interest in a subject and a desire to read more about the topic, he may not know the use of the table of contents, dictionary, library facilities, encyclopedia, location of material, index, glossary, atlas, telephone directory, magazine files, graphs, drawings, pictures, newspaper guides, or card catalog. It is always well for the teacher of these intermediate grades to teach concrete helpful lessons in each of these study skills as early in the year as possible. Then she has grouped all children who need added help in these study skills.

With these individual children, the practice books, *Work and Read, Think and Read,* and *Study and Read,* will be excellent aids. For planning and developing lessons in these study skills for Grade Six, see Hovious, *Wings,* and manual, published by D. C. Heath and Company.

A child must be taught to meet his problem:

1. Understand his problem clearly.
2. Find sources.

3. Use means, index, table of contents, etc.
4. Skim effectively.
5. Make running notes.
6. Appraise material.

Mott and Baisden. *Children's Book on How to Use Books and Libraries*, Chas. Scribner & Sons, 1937, pp. 97-99. Gives help in:

CHOOSING BOOKS

1. Interesting Titles.
2. Author's name: Who he is. Do you know him? What does author recall? Is he an old friend?
3. Illustrator.
4. Publication date.
5. Table of Contents: Are the titles interesting?
6. Review of Book: Where did you hear of it?

In Grades Four, Five, Six, teachers will find children at various levels of comprehension, namely:

1. Simple comprehension—open book.
2. Simple comprehension and retention—closed book.
3. Interpretation or implication—open book.
4. Interpretation or implication—closed book.
5. Organization.
6. Generalization.

Naturally, the child will have to be led on from what he is able to accomplish. The back pages of each Grade Manual in the *Reading for Interest* series lists reading skills to be accomplished and corresponding help given and listed in the *Reading for Interest* Practice Books. Teachers often list these skills in "Associating Ideas, Enlarging "vocabulary," or "Organizing Ideas and material" on charts to be kept before the children so that each child may be made directly conscious in what skill he needs extended practice.

For example, in *Organizations*

1. Relating words.
2. Relating thoughts.
3. Orderly Thinking—sequence of facts.
4. Following directions.
5. Outlining.
   Major—Paragraph—Sentence
   Sub-topics.
6. Noting details.
7. Making running notes.
8. Summarizing.

If a child needs more practice on following directions he may work on pp. 4, 42, 68, 69, 74, 75, 106 of *Work and Read*, the practice book for Grade 4.

If a child needs more practice on use of homonyms, antonyms, synonyms, prefixes, and suffixes, he may work on pp. 47, 60, 61, 62, 72, 83, 86 of *Think and Read*, the practice book for Grade 5. (See also the helps given in "Word Parade," Carol Hovious, *Wings*, published by D. C. Heath and Company.)

If a child needs more practice on recognizing subordinate ideas as aid

in outlining, he may work on pp. 54, 73, 99, 100, 101, 104, 105 of *Study and Read,* the practice book for Grade 6. In all these grades, the work is thus not assigned lessons to follow book procedure, but becomes concentrated effort on the part of the child to better his own reading techniques.

With the present crowded conditions in the classrooms and frequent changes of both teacher and child personnel, the Reading for Interest series, with book content of high *interest* level, and Manual and Practice Books for extended training in skills, makes for a solid reading program in Grades Four, Five, and Six.

A MODERN TWELVE-YEAR READING PROGRAM FOR A MODERN AGE

Mrs. Mary Lembke, Principal, Laurel School, Brea, California.
Representing Scott-Foresman Company.

In 1909 the first *Elson Reader* appeared in the schools. It was an upper-grade book because in those days they started at the top and built downward when they made a set of readers. In 1912-1914 the *Elson Primary School Readers* appeared and were the first to organize primary reading around the natural interest centers of boys and girls. In 1920 the Elson Readers presented the first pre-primer, which many will remember as the Elson Hand Chart. Today no primary school would consider being without pre-primer material. In 1927 the Elson program introduced the first reading workbook definitely correlated with the readers, to promote and develop the reading skills. Today no basal series is considered complete without workbooks to accompany the program.

In 1930, when Dr. Gray joined the authorship staff of the Elson program, the *Elson-Gray Readers* introduced concept control and vocabulary control in the primary grades. Since then vocabulary control has become an integral part of all reading programs. In 1933 Dr. Gray introduced the Curriculum Foundation program in which the books for social studies, health, science, art, and numbers were integrated with the reading program and made a definite part of it. Thus it was the first program to make possible reading-to-learn in the content area of the primary curriculum, correlating the reading materials in these fields with the vocabulary of the *Elson-Gray Basic Readers.*

In 1937 the Elson-Gray program presented *Before We Read,* the first pupils' book for the pre-reading period. Since then all reading programs are presenting special materials directed toward reading readiness. (Probably we should use a different title for this material today, in view of the

newer definition of reading used by Dr. Spencer in this conference.)

Thus you can see that during the past thirty years and more, the Elson-Gray program has made one contribution after another to the teaching of reading in our schools. And, interestingly enough, these new innovations have tended to become standard practice for all reading programs. But fully as important as this record of leadership, is the long experience with reading problems which has given continuity to the Elson program. The continuity of this program is unparalleled in the history of reader-making. While other publishers have been issuing from five to eleven different series of basal readers in the past thirty year period, the Elson-Gray alone has been so fundamentally successful that it could be maintained in a continuous program, its roots deep in the experience of years of making reading programs.

The Elson readers have become so much a part of American education in the past thirty years that only a few years ago one of our editors was interviewed by *Time* for an article on school textbooks. One of the questions asked by this reporter was how it was possible to make a set of readers that would continue in popularity as had the Elson readers. Possibly some of you have wondered about this same thing. Well, I'll tell you. The Scott-Foresman Company has a tremendous reading laboratory, composed of the schools of the United States that are using the Elson books. This laboratory, where teachers and pupils are working together day after day, is the proving-ground of our materials. When we are preparing a revision of the readers, teachers tell us what to do and then we do what they tell us.

What did the teachers tell us to do for these newest books? How did they tell us to improve something already good? Boiling down thousands of suggestions and comments, here's what they told us to try for in the new books:

1. *More interest.* Reading in the schools today has to be able to meet the hard competition of comic strips, picture books and magazines, and radio programs.
2. *Greater security* for the learning child, and this particularly at the beginning of reading.
3. *More independence* and power by the end of the third grade, for middle-grade reading needs.
4. *Shift of the teaching program* so that more of it comes in the second half-year instead of the first half-year where it has always been heaviest in the past.

That's quite an order. Let's see what we did about it. First, what did we do about getting more interest? Interest is a subjective quality. All books claim to have it. We have always put forth every effort to have the most interesting material we can find. Mr. Elson, the grandfather of the series, said long ago when he first started making readers, "No reader is any better than its content." We have constantly kept that motto in mind as we have searched for the best stories to use in our reading program.

How can we get the best stories? There are three possible ways to do this: First, you could make them up, which reminds us of the old fellow who was asked if he could play the violin. "I don't know," he answered, "I never tried it." Second, you could hire children's writers to produce the stories by giving them a word list and asking them to get inspired. Mr. Foresman has said that is like asking a girl to fall in love with you. Third,

you could select the best stories from the best authors in all juvenile literature. Thus you choose the best of the best. May Hill Arbuthnot, one of the outstanding people in the field of children's literature, has had the job of choosing the two hundred or more stories that appear in the primary books. Do you suppose that any one or even a half-dozen writers could produce the best two hundred stories, even if they wanted to?

But we can't run wild on interest alone. Teachers have asked us for more security for the learning child, particularly when he is beginning to read from the printed page. How do we do this? We try to do this in two ways, (1) through content control, and (2) vocabulary control.

We use three types of content control. As we read we visualize mentally what happens on the printed page. Through our minds pass a panorama of pictures. We call that imagery. Unless we have that imagery we cannot interpret what we read. Little children also have to visualize what they are reading. They can visualize things in their own world, from past experiences. Dr. Gray calls this the recognition level. When children are learning to read they can't go very far beyond this recognition level. Later in the reading process, perhaps by the third grade, they can do what Dr. Gray calls the creative level of interpretation. This is a high and more difficult type of imagery in which the pupil must improvise mental pictures of things, times, places, episodes and scenes that they have not directly experienced.

The second method of content control has to do with the areas that have been marked off by the social studies people as the broad areas that parallel the growth of the child. These areas are: in Grade One, home and school; in Grade Two, neighborhood and community; in Grade Three, the larger community, town and country (note how the titles of the readers fit these areas). Within each of these areas there is plenty of room for growth at the recognition level. Somewhere, however, we have to begin the transition from experience reading to the creative level of reading. We don't think this can be done in the first or second grade. Complication of remote time and place must be avoided until the child is fairly secure at the recognition level of interpretation. Therefore, we don't give regional geography, such as queer people in queer places in the second grade, nor journey geography in the third grade. But we do give in the upper third-grade book and manual special material and special training leading to the creative level of interpretation. In this way we build a bridge to Grade Four, where we give the children security as they meet for the first time the complications of unfamiliar times and unfamiliar places in the content subjects of history and geography.

The third content control relates to the control of the meanings of words. It is very important that old words, being used in a different sense be thoroughly understood by the child. It is usually more difficult for the child to understand a new meaning for an old word than it is to learn a completely new word. In our manuals we anticipate their shift in the meanings of words so that the teacher can prepare the pupils as they come upon old words with new meanings. To do this we had to keep a meaning history of every word introduced. A good example of this can be found in the shifts of meaning of the word "time" as used in our first reader: (1) It is time to go home; (2) It is my time to feed the pets; (3) What time is it? (4) We had a good time at your party. As you can see it is used with four

different meanings, all very familiar to children, but nevertheless likely to confuse them unless the teacher is alert to the situation. Each change in meaning of an old word is called to the attention of the teacher in the Guidebook.

The second way in which we attempt to give the beginning pupil more security during the learning process is through our pattern of vocabulary control. Teachers have asked us to provide an easier beginning of reading at the pre-primer stage, as too many children are lost in the early weeks of their learning to read. What have we done in this direction? We have worked out a new pre-primer plan. In 1920 we brought out the first pre-primer produced for a reading program. In 1930 we simplified the pre-primer and later added a review or plateau pre-primer. In this new series we abandoned the 1930 plan for the following reasons:

1. The first pre-primer was the hardest, the second being a review book.

2. The review or plateau pre-primer was of little help to the child who did not make the grade with the first pre-primer; he could not review what he had not learned.

3. The old-style pre-primers depended too much on the printed word to give the story; children do not have enough grasp of printed symbols in this early stage to lean so heavily on words.

What we did was to develop the talking-picture story, in which the picture carries the setting, characterization, and action—everything except what the characters actually say. It is the "funny paper" technique—the pictures show what the characters do, and the words tell what they say. Using the talking picture story it is possible for children to read a complete story the first day at school. Whether or not he knows all the words of the text a child can interpret the pictures and thus get the full satisfaction of understanding and success. As he gets a better grasp of printed symbols the text becomes more important; but in the early stages of reading the child is not dependent on printed words.

The answer to the other two reasons for abandoning the plateau pre-primer is the re-teaching plan for security. Many children—often bright ones—don't "catch on" for a while. To protect these children from quick and tragic failure, Dr. Gray has developed a sequence of three pre-primers on a re-teaching plan.

Teachers have asked us for a stronger foundation for middle-grade reading. The fourth grade has been a very difficult jump for children. We have done something about this, based on the following assumptions:

1. The lower-grade stage is learning to read; the upper grade, reading to learn. The first stage represents the recognition level of interpretation, the second stage the higher or creative level of interpretation. We have to build a bridge from the lower to the higher level.

2. The vocabulary learned in the primary grades must reach all the way up to the middle grades.

3. For middle-grade security in reading uncontrolled material, children must have a greater independence with words. That means a phonetic course that doesn't fade out in the second grade—a phonetic course that will actually operate with words of more than one syllable.

To bridge the gap in interpretation, to get children from the recognition level in the lower grades to the creative level in the upper grades, we

have to plan and provide for this difficult transition. It is a difficult thing for children to visualize or image things, scenes, and events in remote times and places. In our third and fourth grade books we provide special units dealing with the complexities that arise from the factors of time and place. That is why we call our fourth-grade book *Times and Places*. We also have special help in our manuals in order to assist teacher and child in the difficult transition to creative, or adult, reading, a transition they must make successfully if they are to understand what they read in their geographies, histories, and books in the other content subjects.

How many sight words should a child know at the end of third grade? This is what the experts say is a minimum vocabulary for the beginning of fourth-grade:

Gates says 1800
Thorndike says 3000
Dolch said 2500
Durrell says 3000
Stone says 1800-2000
Fourth-grade Reader A uses 3140
Fourth-grade Reader B uses 3180
Fourth-grade Book C (a widely-used geography) uses 4000-plus

These are the actual vocabularies of representative fourth-grade books. How far will you get in preparing for these fourth-grade books with a primary reading series that uses only 1200-1500 words? You can see why the authorities center around the 2000-word minimum as a prerequisite to fourth grade. Dr. Gray in his primary readers uses just under 1900 words.

Assuming that the experts are right—that we should have about 2000 words as a minimum for the first three grades—how should we distribute these words? What would be a common-sense arrangement? Would it make sense to put about 650 words in each grade? Or would you put more words in second grade than in first? Of course you would. Would you put more words in third grade than second? I think we can all agree on that. From the following chart note the gradual building of the New Basic vocabulary which we use, and remember as you study the mounting scale that practically all words are maintained by re-practice year after year.

Grade	*New Words*	*Total Accumulated Words*
one	336	336
two	563	899
three	967	1866
four	1060	2926
five	1368	4294
six	1546	5040

This is the picture of the most gradual development of an adequate reading vocabulary that has ever been put into a series of books. It demonstrates the careful planning that has gone into the making of this series. "Not just books but a real reading program." This distribution is made possible by a new feature—special second-semester books for Grades Two and Three. With the traditional plan of a single basic reader in each of these grades, it was ordinarily the custom to read the basic book, which carried the bulk of new words for the year, in the first semester. Then in the second semester, when it is fair to assume that children are better able to learn new words, time was spent with supplementary material—of un-

known vocabulary. The two-basic-book pattern places more of the new-word burden in the second semester—where it can better be carried—and provides for planned growth in vocabulary straight through the year. This has never been possible before.

The use of special second-semester books makes possible a gradual increase in vocabulary at every level. The fact that every word is carried over from book to book means no waste or lost motion. This new pattern means a better bridge to Grade Four, a better preparation for good interpretation, for creative reading.

We are sometimes asked specifically about our skill program. Where is it? In the books themselves? The work-books? The manuals? The skill program used to be in the books; now it is in the manual and the work-book. It isn't the plan to use the work-book independently like a correspondence course. The manual sets up the background for the skill program in an oral, social, language situation, where children pool ideas and share experiences. In the manual plus the work-book is developed a very complete phonetic program. Formerly the phonetic program stopped with one-syllable words. In these books it continues into the middle grades and takes care of polysyllabic words and use of the dictionary. From book to book the skill program doesn't duplicate; it reviews, but still goes forward.

The Teacher's Guidebook for every Basic Reader shows the way. It helps the teacher get the highest possible value from each story. It suggests to stimulate creative teaching. It encourages imagination through great variety of procedures and it is practical enough to really tell how to apply the suggested techniques.

A great variety of ways to develop interest in stories is provided. A clear description of the suggested approach, content background, vocabulary concepts needed, and presentation of the first reading is given for each story in the Teacher's Edition. Certain parts of each story are suggested for re-reading for a variety of purposes. Skills in oral reading, like the use of cadence to emphasize the mood of the story, are suggested and their teaching methods clearly set forth. There are suggestions for extending interpretation to expand and clarify the ideas in each story. There is a section for each story on related practice that contains an excellent variety of ways to organize information gathered and the technique of group discussion for making inferences and generalizations on the basis of material read.

The phonetic analysis section for each story is a part of a gradually developing word-perception program that spreads over the entire first six grades and merges into the use of the dictionary. The old-fashioned phonics program that placed word mastery in the first two grades and then ignored it henceforth was quite inadequate. Children in the first two grades meet few concepts that are unfamiliar. They read mainly from their spoken vocabulary. It is in third, fourth, and later grades when children begin to do creative reading that they meet an increasingly large number of words that convey new ideas. At this time they need to know how to recognize familiar root words and common inflectual endings, words made by adding a prefix or suffix to a known word or compound words of two familiar words. They need to know how to break a word into syllables, how to interpret accent marks and diacritical marks used in dictionaries, as well as how to use the dictionary in finding the meaning of strange words. They need to know the principles of variability and silentness affecting both consonants

and vowels and the common principles affecting their sounds. Reading power comes through consistent teaching and practice. The daily games and activities planned in the Teacher's Edition, together with the practice activities in the *Think and Do* books (consumable books that accompany each reader), insure steady growth in these important phases of word-perception. They make the teacher's work easier by giving her a ready-made sequence of teaching material and method that is educationally right in graduated difficulty, as well as right for the needs of the story being read.

All of the fine teacher material—from developing interest; developing good habits of recogniton; teaching clear, accurate interpretation; and developing habits of reacting critically to ideas secured by reading—to teaching fine oral reading, providing motives for permanent interest in reading, and refining standards and tastes—are carried on at the junior high school and high school levels in *Growth in Reading* I, II, and III and *Literature and Life* I, II, III, and IV.

Growth in Reading takes the natural approach to reading. Genuine interest is the one big objective. Making skills themselves the main goal is psychologically wrong; pupils are not interested in skills, as such, and they quickly grow weary of "preaching" on the subject. The development of skills and habits can be acquired in a perfectly natural manner if the right reading materials are put in the hands of all pupils and are developed in a manner that maintains and extends the pupil's interest. With this fact in view our experts have made the material "keen" stories first and teaching material second. *Literature and Life* is based on the idea that all literature should mirror the "life" of the times about which it tells. It is organized around the "life idea." It is more than just a collection of stories. Fifty-six percent of the material in the first book is contemporary. The stories are close to the interests of high school people, they develop themes of social value, and give recognition to authors who have distinguished themselves during the last ten years. The last two books portray life in America and England through the literature of the two countries.

Recently *Growth in Reading* has been used in a program for the improvement of reading at the junior high school level in Dr. J. W. Crane Remaley's School in Verona, Pennsylvania. Sixty-four seventh graders and thirty-nine eighth-graders were a part of the experiment. Some of the more pertinent results will be of interest:

	7th Grade	*8th Grade*
I. Q. range	60-132	78-116
Reading age range	11-2 to 16-9	11-7 to 16-8
Average reading growth	27 months	20 months
Average growth of lowest 25%	11 months	8 months
Average growth of highest 25%	43 months	32 months

In conclusion, this twelve-year program is the result of more than thirty years experience and use in the classrooms of the country. Out of this immense laboratory has come the present program of reading. As teachers go on using these books we will learn of other things that we can do to improve the teaching of reading and thus by working together we will make books that are ever more usable by the boys and girls of our classrooms.

READING MATERIALS NEEDED UNDER AN ADEQUATE PHILOSOPHY OF READING

Clarence R. Stone, Webster Publishing Company

I. Philosophy and Psychology of Reading Instruction

Some basic concepts. Methods and materials in reading should be based upon certain fundamental principles. In the first place, it should be realized that reading is experienced. Reading provides the golden opportunity in school for enriching and extending first-hand experience. In the second place, as Thorndike pointed out years ago, reading is thinking. Consequently it should always be on a meaningful basis and on a level of difficulty within the mental grasp of the child. Reading as commonly utilized, involving correct interpretation of visual symbols in the form of words, sentences, paragraphs, and larger units, is an amazingly complex and difficult process to the child who for various reasons experiences difficulty in learning to read.

Learning to read throughout the elementary school, whether it be incidental or through direct, planned instruction, involves not only valuable experiences, increasing ability to think and interpret, adequate comprehension for the purpose in hand, but also the acquiring of certain habits, skills, and knowledge, all of which may well be designated by the old-fashioned expression, "the mechanics of reading." For example, to enjoy reading and advance properly the child must acquire on each level an adequate stock of words immediately known at sight as to meaning and pronunciation, needs eventually to know the letters of the alphabet, should have a working knowledge of phonics as applied to polysyllabic words as well as to one-syllable words, must acquire the proper eye-movement habits, should develop the ability to convey meaning to auditors through oral reading, should gradually increase in rate of reading from level to level, and by the end of the elementary school should acquire the various comprehension skills required for economical and efficient study-reading on the level of material he is expected to use in the units, activities, or fields of subject matter.

Thus we see that there are two main phases to the reading problem, the mechanics of reading on the one hand and the spiritual values of interpretation, wide vicarious experiences, and worthwhile interests and ideals on the other hand. These two phases must always be kept in mind and kept in balance in planning the course of study, in thinking about methods and techniques, and in selecting and using a battery of materials.

Extremes in method. Too often the American schools have gone to one extreme or another in methods of instruction in reading. Only a quarter of a century ago there was undue stress on the mechanics of reading throughout the elementary school and a failure to give anything like adequate attention to reading as a means of building desirable interests and ideals, and to reading as a means of developing ability to think and to inter-

pret. In fact reading up to that time was thought of almost entirely as an oral process. The whole emphasis in school was upon a special form of reading little used in life in comparison to reading as thought getting, which of course is non-auditory or a silent process. The teaching of reading was upon a highly mechanical basis, utilizing a slow, laborious, analytical, oral method, exactly the wrong procedure for developing the spiritual values previously outlined.

Currently there is a strong tendency to go to the opposite extreme. In many quarters the child is expected to acquire the mechanics of reading incidentally through reading experiences as an integral part of activities related to units in an integrated course of study together with experience in reading for fun in the school library or voluntarily at home. Some professors of education have gone so far as to say that the best way to teach reading is not to teach it. Many schools have attempted to apply this philosophy in a more or less modified form and with varying degrees of success. The children who have little or no difficulty in learning to read progress well under this plan. But often the less fortunate ones, laboring under a constellation of handicaps, including the bright as well as the dull, become confused and discouraged, and develop the wrong attitudes toward reading as well as very bad habits. While there is much to be said for the newer, child-centered, experience-activity philosophy of education, reading methods and materials based solely upon it do not solve the reading problem.

Extremes in content. In each period in the history of reading in the American schools there has been a strong tendency to go to some extreme in the content of school readers. During the time of the dominance of the famous McGuffey Readers, the emphasis was upon material for teaching moral lessons. Twenty-five years ago the content of readers even from the beginning of the first grade was exclusively classical literature. Nothing else was being published because the schools would buy nothing else. Eventually the demand for informative material in connection with the silent-reading wave demolished this fetish for using only classical literature. The learn-to-study movement was in full swing and work-type or study readers had their day. Fundamentally such readers are practice readers and the authors attempted to apply the psychology of practice in the methods utilized and in the organization of the material. Furthermore, the theory that the child's first reading material should be based upon familiar, interesting experiences superceded the classical-literature theory and is now commonly accepted.

The philosophy of the activity program and the theory of large integrated units into which the reading experiences and instruction would be fitted have lead in recent years to an increasing use of social studies as the integrating nucleus. Hence the increasing demand for social-studies material in the readers with the result that we now have the dominance of social-studies content in school readers almost to the exclusion of classical literature and other valuable types of reading material. So we are now witnessing a new extreme as to content of school readers. The readers now in adoption in California are in the main predominantly the social-studies type. This new extreme is in fact a reflection of our industrial, machine age with its complicated social environment and social problems. While a greater emphasis is needed today in this field than in former periods, nevertheless we

should avoid going to the extreme in this direction and thereby fail to use valuable reading material in other fields.

Balance and comprehensiveness. What is needed in a modern program of reading is balance and comprehensiveness. We need a well-balanced, broad program of aims, varied methods of attaining the distinctly different objectives, and a variety of materials with each type adapted to the accomplishment of particular purposes. A comprehensive program of this kind puts much less emphasis upon a basal series of readers, or may even eliminate the basic series. Instead several series of reading textbooks varying as to type of content, function, and level of difficulty are needed for each reading level.

Types of reading textbooks and accessories. It cannot be too strongly emphasized that there should be available to each teacher instruments of instruction in reading of varied content and function and of two or three levels of difficulty on account of the wide range of individual attainment in reading in the typical class.

There are a number of types of material as to content and function. These are illustrated by the different types of reading textbooks. We had the literary readers appearing in large number two to three decades ago and they appear infrequently today as new books. Such books or sections of such material in readers, if the material is carefully selected on the basis of interest and proper level of difficulty, are valuable in relation to what has been called the spiritual values in reading. The work-type or practice readers for building skills in silent reading, or study reading, came as a needed balance for the literary readers. The newer practice readers of recent publication have more timely content and are more scientifically constructed, and consequently they are being more and more widely used. The next type of reader to appear is the general or omnibus reader carrying a variety of types of material with different functions such as classical literary material, work-type or practice material, character-building material, science selections, and reading matter in the social studies. The more recent the publication the larger amount of social-studies material there is likely to be. Finally we have many recently published series of readers predominantly social-studies in content. These social-studies readers are often offered and adopted as basal textbooks, but they are special types of readers rather than general basal books. Of course we also have other types of content readers such as the nature or science readers and health and safety readers.

Within comparatively recent years there has come into wide use a new type of textbook known as the workbook. It is my opinion that this type of material is invaluable as an aid in developing the mechanics of reading, especially as related to vocabulary readiness and growth, phonetic instruction, and comprehension in reading. It is also my opinion that an adequate battery of textbooks in reading for each level should include a workbook, either one that is coordinate with one of the readers or one of the independent type. For groups of retarded readers material of this type in adequate amounts and variety as to function are indispensable.

The standardized reading test is another special type of reading material of great value for diagnostic purpose and for use in grouping children for reading instruction. In order to profit most by the use of reading tests, the teacher of course must know the function and limitations of the test used and not give undue weight to the results of one test.

Individual differences and varied materials. The problem of individual differences is a very difficult one for the teacher with the usual number of children assigned to a classroom. These wide individual differences in reading attainment make it unwise to carry on uniform reading with a whole class of the usual size and variability in reading attainment. The most feasible plan is to divide the class or room of pupils into two or three groups on the basis of general attainment in reading as determined by power or level of comprehension test combined with the teacher's judgment as to the reading level for which the child is prepared. The next problem is to locate material of the proper level of difficulty for each group. A reader with a preparatory workbook accompanying it will be found of special value with the group lowest in reading progress. Independent workbooks, especially workbooks in phonics will be found very helpful with the retarded group.

The wide individual differences within the typical class so far as reading level is concerned emphasizes the fact that a basic reader for use by all children in a particular grade is inconsistent with modern scientific education of the child-centered type. California a few years ago departed from this plan by adopting two reading books for each level or grade. But apparently there was no attempt to select the two books for a particular level or grade on the basis of differing levels of difficulty, and usually both books are predominantly social-studies readers. In selecting additional books, the principles of variability as to content, function, and level of difficulty to provide balance and comprehensiveness and to provide for individual differences in level of attainment should be followed. Also special attention should be given for the provision of material specially designed and scientifically constructed for the remedial instruction of retarded readers.

The problem of readiness. Too often the discussion of reading readiness refers to readiness for the beginning stage of reading. While this particular problem is very important, it is also important for the teacher to consider carefully the child's readiness to undertake each succeeding level of reading activities. In spite of all that has been said and written about the importance of education being child-centered, of adapting instruction to the needs of the child, and of grouping on the basis of levels for reading instruction, we find in the schools today large numbers of children being given assignments of reading materials entirely too difficult in relation to reading ability. The problem of reading readiness exists for all levels and in the main the child should not be instructed on a level for which he is not ready, or reasonably well prepared in terms of vocabulary attainment and comprehension level.

Much has been written concerning readiness with respect to the beginning stage. It must be quite evident that the child's readiness or lack of readiness for that stage will depend to considerable extent upon the method used and the simplicity or difficulty of the beginning materials in reading. Assuming normal intelligence, normal physical conditions especially with respect to vision and hearing, and normal experience in family life with opportunity to have experiences with pets and playthings. I believe the average six-year-old child is ready for beginning reading if the simplest beginning materials available are used. Usually such a child is ready to learn to read from the standpoint of wanting or desiring to learn to read.

One of the most recent new-comers in the field of textbooks is the

readiness workbook. Aside from vocabulary readiness, just what are the special reading-readiness functions which may be measured and for which workbook, practice material may be provided and used with profit during the pre-reading stage? The most important function seems to be visual discrimination of forms including word forms. Practice material of this sort should constitute a large portion of the pre-reading readiness workbook. There are also other functions such as interpretation of pictures, and apprehension of story sequence in a series of pictures. Personally I believe the pre-reading, readiness workbook should introduce through the picture-dictionary technique some fifty or sixty of the most important words for pre-primer reading and utilize the thought-getting, workbook techniques for preliminary learning of the words as a part of the reading-readiness training during the pre-book stage. By the use of such a readiness workbook I am convinced that many failures in beginning reading can be prevented—failures due to an inability of the child to get started in word recognition because he is confronted with too many word difficulties even in the presumably simple pre-primers.

Likewise on each succeeding level, preparatory, workbook material, either in coordination with a series of readers or independent of any series, will aid materially in preventing reading retardation. The workbooks accompanying the Gates *Work-Play Books*, the Nila B. Smith *Unit-Activity Readers*, and the Stone *Joyful Readers* are of this type. I am now working upon an independent series of readiness workbooks for the different levels from the pre-reading stage up to and including the third-reader stage. The vocabulary has been selected on the basis of the Stone *Graded Vocabulary for Primary Reading* (1941), which was derived from data showing the words introduced, and the level at which each word is introduced in seventeen series of primary readers published 1931-1941.

The critical beginning period. I have personally diagnosed and instructed a considerable number of non-readers and seriously retarded readers of varied ages, mentality, and grade placement. In nearly all of these cases I have found that the child had difficulty getting started in reading, failed to make satisfying progress in the early stages, became discouraged, and came to dislike reading. Such children not only have missed the joy of satisfying reading experiences and the child-development advantages of reading but also usually have personality problems and emotional disturbances resulting partly if not wholly from their failure to acquire facility in reading. Too often such children are successively instructed on a reading level too difficult for them and their predicament becomes more and more disastrous for them. Hence we see that the beginning period of reading is a critical one, and it is highly important that the child be in a state of readiness before undertaking pre-primer reading and that the slow learners in reading be given special consideration. It is well for the teacher to have a reserve of special materials particularly adapted to help these children succeed in beginning reading. Later some materials specially suited for use with such groups will be described briefly.

Of course there are different approaches to beginning readers, but today there seems to be considerable agreement among experts designing the materials that an abundance of simple, attractive, interesting material is essential. Some teachers and supervisors have assumed that most any book labeled "pre-primer" is an easy beginning book. But various studies of these

booklets show that they vary greatly in difficulty due to variation in vocabulary load, in sentence structure, in amount and value of the illustrations. Other things being equal, the simplest one available should be used first.

A current theory tried by many teachers is that of having the children read a number of pre-primers before undertaking a primer. If the pre-primers are unrelated to each other with a relatively small carry-over of vocabulary, this plan involves too many word-recognition difficulties and introduces too many characters. However, the use of two or three pre-primers of the same series with the same characters and with a gradual introduction and repetition of words, is sound.

With flexible chart material, a preparatory workbook, and the proper correlation of the pre-primer with the primer it is possible to proceed to the primer after the pre-primer of the series has been completed. For example, after the Pre-primer of *Joyful Readers* with its 45 different words has been completed, the first 15 pages of the Primer may be read without any new words being met.

Vocabulary problems. Fluency and joy in reading can be developed only if the difficulties in the new material in the reader are reduced to a minimum. This problem is partly solved by introducing new words very gradually and providing an abundance of repetition in highly interesting and attractively illustrated material. In addition the preparatory workbook material is very valuable for providing readiness for reading the new material through the introduction of new concepts and of new words likely to cause difficulty. Also in workbook material special exercises can be designed for improving the child's visual discrimination of word forms, his ability to see the natural recognition units within the words causing difficulty, and his knowledge and application of phonics.

The farther up the grades we go, the greater the possibility there is of including in the reader preparatory exercises to provide readiness for reading the selection or unit ahead. Material of this kind may be found in several of the newer series of readers.

The problem of the vocabulary load in each book of a series of readers has received much attention during the last fifteen years. During this time the vocabulary load in series of readers as a rule has become increasingly lighter. The amount of material has been enlarged and the number of books in the primary series greatly increased. Today instead of the standard four books for the primary grades, we have six to eight books preceded by one, two, or three pre-primer booklets. In addition the proportion of space devoted to illustrations has been considerably increased. These developments make for easier reading material, but it is possible to go to an unreasonable extreme. For example, one series with three pre-primers, two primers, two first readers, two second readers, and two third readers introduces only 1174 words.

It should be remembered that adequate expansion of vocabulary is essential for joyful free reading, one important ultimate objective for each level. Another series with three pre-primers, one primer, one first reader, two second readers, and two third readers, introduces a total of 1887 words. If other books are used on each level, as should always be the case, certainly the vocabulary load is sufficiently light. My study of the vocabularies of seventeen series of primary readers shows a total of 5314 different words, and

indicates the need for a vocabulary of 2000-3000 words for the independent reading of school books and library books on a third-grade level.

Another aid in vocabulary expansion is a good series of workbooks. For example, the *Joyful Readers* introduce 1475 words. The workbooks include an additional 485 new words, making a total of 1960. The use of *Eye and Ear Fun,* Books, 1, 2, and 3, as one of the series of textbooks of the whole battery, will aid in vocabulary expansion as well as the phonetic knowledge and training in word analysis required for independence in word recognition.

Phonics. The problem of phonics has always been a controversial subject in primary reading but it is less so today than ever before. While the extreme advocates of learning to read incidentally through the experience-activity plan still decry giving any attention to the child's acquiring phonetic knowledge and skill, the consensus of reading experts and teachers today favors a reasonable amount of direct instruction with a view to independence in word recognition, especially for the fifty per cent not readily acquiring incidentally the phonetic knowledge and word-analysis skills essential for fluency, accuracy, and independence in word recognition. But there is not agreement as to content and method to be used. Personally, I am convinced, as a result of extensive observation and experimentation, that expertly designed workbook exercises in phonics provides the most economical and effective material.

There is not time here to go into the guiding principles, the organization of subject matter, and the methods and techniques involved in a modern course in phonics, but a brief treatment will be found on the inside of the back cover of each book of *Eye and Ear Fun.*

I should like to point out that the upper reaches of phonics and word analysis have usually been omitted. To acquire independence in word recognition the child must acquire facility in syllabication and a working knowledge of the rules governing vowel sounds in syllables. In the past the matter of vowel sounds has been negeltced and too great dependence placed in having the child learn a large number of phonograms. Likewise too great dependence has been placed upon one method of attacking a new word, whereas versatility in combining meaning or context clues, visual aids (word-form clues and visual analysis into parts), and phonetic knowledge is what is needed.

II. STONE-WEBSTER MATERIALS

Although I hesitate to say anything about my own materials, I will give a brief description of those published by the Webster Publishing Company for which I am wholly or partly responsible, only because the Chairman of the Reading Conference has requested me to do so.

Classification Test for Beginners in Reading. This test measures visual discrimination of likeness and difference in word forms, the most important special psychological function determining progress in reading. Scores on this test at the beginning of the first grade have a high correlation with scores on reading attainment at the end of the grade. The scores on the test are helpful to the teacher in grouping the children tentatively for beginning instruction in reading.

Stone-Webster Test in Beginning Reading. The vocabulary was selected so as to include an adequate sampling of words most commonly

appearing in pre-primers and primers. For this reason it is one of the very few tests providing a valid and reliable measure of reading attainment in the first grade. It may be given at the end of the first half-year or at the end of the first year of reading instruction.

Seatwork Activities. This workbook introduces 88 words by means of the picture-dictionary technique. It is therefore suitable for use on the pre-primer and primer levels. It provides the pupils with a maximum of self help through the picture-dictionary pages distributed throughout the book. The type is extra large with heavy strokes. It is specially valuable for use with the older non-readers and with small groups having failed to get an adequate start in reading.

Beginning materials: Flexible Chart Materials. A Preparatory Workbook, Fun for Tom and Jip, and Joyful Stories. These beginning materials of the Joyful Readers constitute a refinement of the beginning materials of the Webster Primary Readers, which I developed experimentally some ten years ago in the Oakland Schools with the cooperation of the Primary Supervisor and some 50 first-grade teachers. I met one of these teachers the other day and she told me that she is still using this plan and these materials in beginning reading because she has never found a plan or materials that get as good results with the slow learners in reading. The approach to reading is through a new type of flexible chart materials easily accessible and easily re-stored in the filing box in which they come. There are picture-dictionary cards, unlabaled pictures, word, phrase, and sentence cards for use on the Plymouth Chart or similar container.

Following the use of these materials the same vocabulary is met in the preparatory workbook and coordinately in the pre-primer, which compartive studies show to be one of the easiest available. During this pre-primer course 45 words are learned and some story-reading has been done. The first fifteen pages of the primer contain no new words. This pre-primer and early sections of the primer together have a lighter vocabulary load than the two California pre-primers together or of most any two pre-primers. For years I have used the preparatory workbook, pre-primer and early sections of the primer with a considerable number of non-readers who had failed in beginning reader. The results show 100% success. I believe these refined materials published in 1940 as a part of Joyful Readers are the best materials available for use with groups of children who have not made a successful start in reading during the first-half year in the first grade.

What Fun, Joyful Times, Joyful Trails. The first reader, second reader, and third reader of the Joyful Readers with the accompanying workbooks, containing preparatory exercises for introducing new words, seatwork and test material to follow reader selections, and a course in phonics similar to that in Eye and Ear Fun, provide the best material I know of for co-basis use with retarded groups of readers, the first reader in the second grade, the second reader in the third grade, and the third reader in the fourth grade. Nearly all teachers have these retarded groups and should have special below-grade materials that the children have not seen before. But these books will be the most effective only along with the accompanying workbooks.

The Webster Readers: Grades 4, 5, 6. Joyful Adventures, Treasure Chests, Joyland in Reading. These are general or omnibus readers, a combination of the literary, work-type, social-studies, and science readers. The results of a number of significant research experiments to locate the most

interesting literary selections and to determine the correct grade placement for each were utilized. Preparatory, vocabulary exercises are an important feature in the books. Although published in 1935, these books are widely used and are still having a good sale. After all does well selected and graded material really get out of date?

Southern Life and Literature: Mustang Gray, Grade 5; Pine Knots-6; Cypress Knees-7. Most authors of readers for the intermediate grades, including myself, have followed the New England tradition in selecting the literary material to the serious neglect of much excellent material portraying life peculiar to the South in different periods of our history. These books are designed to remedy this deficiency and contain sectional material. They are intended for use throughout the United States for giving a better appreciation of the best contributions of the South and for helping to overcome provincialism. Aside from the experimental work I did in developing the materials in beginning reading, the two years' work I did on this series, including an extensive automobile trip through the South and the use of the Congressional Library in Washington, D. C., I found this project the most interesting one of my twenty years of continuous work on publication projects.

Eye and Ear Fun, Books 1, 2, 3. These workbooks in phonics took less time and have brought me far more income for the time spent than any other project. Most publications after five years definitely decrease in sales. But this series published ten years ago has continuously increased in sales. The sales for 1943 increased 20% over those of 1942. Millions have been used and millions more will be used. What has puzzled me is why teachers would use these books with groups of retarded readers when better results would really be obtained by using *Joyful Readers* and the accompanying workbooks, which contain a similar course in phonics. But the gratifying wide use of Eye and Ear Fun, continuously increasing for a decade, indicates that they must produce the desired results.

The Practice Readers: Books 1, 2, 3, 4. Grades 3-8. These books were done in collaboration with Mr. C. C. Grover, a principal in Oakland. These inexpensive books contain standardized practice materials for developing seven basic skills in study reading. Each book is organized into units consisting of nine short reading selections each followed by a comprehensive test. There is a pupil's record book in which the child enters his responses and in which he keeps a diagnostic progress record showing his weakness unit by unit and his general progress from unit to unit. Each unit is preceded by illustrated readiness pages. The vocabulary is carefully graded on the basis of the Dolch-Buckingham Free-Association Study contained in "A Combined Word List." There is a brief manual for the whole series.

Book I is designed for normal groups in Grade 3 and retarded groups above Grade 3. The vocabulary is limited to Stone's Graded Vocabulary for Primary Reading (1941) and the Free Association list for Grades 2 and 3. The questions are confined to four of the simpler of the seven skills: direct details, implied details, meaning of the whole, and interpretation of statements related to the reading matter. The eight units are as follows:

Progress Stories: wheel, engines, motors, etc.
Indians Before and After the White Man Came
Pioneers and the Frontier
Interesting Creatures of the Animal World

About Plants and Seeds
Life in the Deserts of Africa and Arabia
Life of the Lapps
Health and Safety

The Practice Readers are offered as one of a number of series of readers. The material is informative and the function is the development of needed study skills. They are suited either for regular textbooks or for remedial instruction of groups retarded in reading.

Division IV

The Reading Of Normal And Superior Children

"The great books of the world will not unbosom themselves to slovenly, incurious, inarticulate readers. The page of a great book does not differ mechanically from the page of a worthless book. It is merely a sheet of paper with some black, odd-looking specks on it. It remains that, or it is transformed into wisdom, beauty, joy. But this transformation depends finally upon the reader, upon the reader's ability to read."—Lee Wilson Dodd, "On Learning to Read," Atlantic Monthly, July 1932.

COMICS AND READING

Mr. Mardie Jay Bakjian, Librarian, Kern Avenue Junior High School, Los Angeles

A comic world of wonder surrounds our young readers today. Their time vibrates with action and adventure. The comics offer them every opportunity to dream of an amazing present and an almost unbelievable future. They sail through space in ships shaped out of their imagination, they fight strange men in strange places: men with huge heads and puny bodies, men gone mad with scientific ingenuity. Their science of worlds in cosmic battle compels us to scoff at them, for *we* are logical and they are not. To us their dreams are draped with fantasy: dreams of flying away from the earth to other spheres with the speed of light. Yet, it must be admitted, dreaming fits the peculiar pattern of invention.

Not all of our young readers cherish wild dreams of science. There are those who reject science and simply dream for dreaming's sake. They scamper through the woods with Bugs Bunny or squeeze out of difficult traps with Mickey Mouse or flop into complicated situations with Donald Duck. Practically all of them, on the other hand, take the war very seriously and follow the adventures of Smilin' Jack, Captain Marvel, Superman, Terry and the Pirates, and a host of others who fight the common enemy wherever he finds him.

It would be understatement to say that our youngsters indicate a keen interest in the comics. The fact is, they devour the comics. It seems they cannot read enough to measure satisfaction, for they race in all directions at the same time in their frantic search for comic books.

Now whether or not we accept the comics really makes no great difference, for in the first place our young people will read them in spite of how we feel about the matter, and in the second place the "we" that refuses to conform comprises a little more than twenty per cent of our population. Generally speaking, 100,000,000 Americans scan the comics, and when you consider the fact that something like one hundred and twenty-five various comic books are published every month, with sales figures for 1943 running as high as thirty million dollars, you conclude that this so-called "menace" deserves more attention than we have been willing to give.

Naturally, we cannot accept any comic book, from the standpoint of reading, as an end in itself. Simply because Billy reads stacks of comic books day in and day out does not prove that Billy is a good reader. However, we cannot assume that the comics are detrimental to Billy's reading growth. Neither must we condemn the comics because Billy cannot absorb the basic skills of reading. Perhaps we ourselves need to become comic fans in order to understand why Billy does not respond to our tastes. In any case, what Billy reads should demand our attention and interest. Not only *what* he reads but *why* he reads it. It is unfortunate that his reading of the comics should receive, for one reason or another, a cold rejection from us. A negative attitude only confuses Billy and leads him to believe that his teacher does

not consider him very seriously. Young readers like Billy worship their comic characters, and to surrender what they believe to be wonderful and sound and good doesn't make sense to them. In short, they feel that we're not in the groove, that we're not "hep," that we're unwilling to cooperate with them. It goes without saying that an understanding of the world in which our young readers live can be of immeasurable help to us.

One way of learning to read is by reading. Yet, the fact that comic book fans are voracious readers is often overlooked. The world of wonder circling round our young readers requires that they learn more and more about their fantastic heroes. Furthermore, their friends and the friends of their friends talk about Batman and Torch and Buck Rogers, and because they are eager to keep up with their friends and know what their friends know about the various comic heroes, they are supercharged with a fire of intense curiosity that flames in their minds and sends them sizzling through stacks of comic books with no sense of neglect that sweeps over them when they are ordered, as it were, to read a portion of worthwhile literature for a class report.

It is important to emphasize that comic book readers read without criticism. They possess, it seems, no sense of evaluation, although they do have favorites among the comic characters. They hunt for action, suspense, humor, wonder, and information, maintaining an attitude of indifference to the serious elements of prejudice and propaganda. Characters are either good or bad. Not infrequently, varieties of propaganda appear in the comics. For example, terms such as nationalism and Americanism and patriotism, mean the same thing to comic fans. In fact, *isms* of all kinds are given pat definitions in the comics, all of which affects the thinking of our young people. What they think is important, for they are the men and women of tomorrow. We cannot prevent them from reading the comics, but we can guide them to acquire a sense of evaluation about the comics as they have come to evaluate motion pictures, radio programs, and the characters of their friends.

Now and again someone questions the literary dangers of the comics. Surveys conducted by the library at Kern Avenue Junior High School point out that about five percent of the words used in the comics are mangled. Ain't, naw, heh, yeah, huh, gotta, chump, nab, yup, goon, yuh, youse, swell, gosh, etc., are representative examples of distorted words.

By the foregoing we may decide either that the comics should be banned or that they should be accepted as we have come to accept chewing gum and lipstick. Moreover, we can go a step further and make an attempt to use the comics as a springboard to better reading.

The printed page lacks the color and the action of a comic book, and besides, it takes "too long," some young readers say, to read a book like "Treasure Island" before you get any action. It is a difficult problem, indeed, to shift readers from the comics to good books. Various methods were applied at Kern Avenue Junior High School. One or two schemes were successful enough to warrant description.

Because students voted strongly in favor of the comics during a library survey at Kern, we decided to be democratic and announced in the school bulletin that a poll would be taken in the library to determine the top ten comic favorites of students. The announcement contained some of the magic associated with the Hit Parade. Students literally descended upon the

library like P-38's. Within a week, the results were tabulated, and lists of the following winners were posted in the library and printed in the school bulletin: Donald Duck, Batman, Bugs Bunny, Superman, Blondie, Buzz Sawyer, Prince Valiant, Fritzie Ritz, True Comics, and Dick Tracy.

The above experiment plus a comic book display in the glass case intensified the interests of students in the library no end. We later commenced to question students individually in the library about their favorite comic characters, acting on the theory that a definite relationship existed between a student's favorite comic character and his general reading. We believed that if John was wild about Terry and the Pirates, he would read "Flying Tigers" for the obvious reason that Terry himself was fighting Japs in China. The first time we tried this simple trick, it worked. Afterwards, we encountered several exceptions, but on the whole, the association between a hero in the comics and a similar hero in a book seldom failed to create interest.

In time, we experimented with all the popular comic characters and succeeded with little effort, thanks to the mysterious charm of the comics. Smilin' Jack, fighting sabotage in South America, took time out to introduce our fiction and non-fiction books on South America to our young readers. Brenda Starr induced the girls to read more books about careers ranging from journalism to secretarial practice. Tarzan took care of our jungle books; Batman cast his shadow on our mystery books; Dick Tracy circulated books on the F. B. I. and crime in general.

To the delight of the students we established a section of shelves in the library for collections of books dealing with the various comic characters. For example, we had the Terry shelf, the Blondie shelf, the Superman shelf, and so on. The dog, Napoleon, had his own shelf of dog stories. Likewise, all the tales relative to horses were on the Midnight shelf.

Although our book circulation tripled within a month, we were not completely satisfied, for it was evident that groups of readers, bi-lingual and remedial children, were lost in the process. They, it seemed, were overwhelmed by the large number of books in the library. Poor readers to begin with, they were poor in the art of selection as well. They didn't know what to read, and although we believed in emphasizing the individual in preference to the group, we were unable to guide the reading of every visitor who came to the library. Their comic characters offered us considerable assistance, but even this scheme could not reach all of our slow readers. Conferences with teachers precipitated the plan of placing collections of library books in classrooms. The books would be selected by the teacher and the librarian in order to bring the right book and the right student together. Each day, a period of time would be devoted to reading in class.

Our counselor, Mrs. Esther Smoot, experimented with the above plan and succeeded in bringing the right books to the right students. At the end of the semester, her students wrote the librarian short letters about this plan of having books in the classroom, and one student, Lena, wrote the following note:

> *"Truly your books have helped me very much. When I first came to Kern, I was not interested in no books at all. So Mrs. Smoot took me in her classroom and every day for fifteen minutes she let us read any book we wanted to. The more I read the more I got interested in them. Well, I will tell the truth. We should*

have about thirty minutes. Will you tell Mrs. Smoot to let us read about thirty minutes because whenever we get to the most interesting part she says close your books. So please tell her to let us read thirty minutes."

To give the students every available means of reading more books and magazines, we changed our library rules and regulations. We decided that readers come first, books second. If a student wanted to borrow several books and a dozen magazines, he was privileged to do so; if he wished to keep them for two weeks, he would simply say, "I want to borrow these books and magazines for two weeks," and he would have them. We permitted each student to set the time limit on almost all library materials he wished to borrow, a time limit not to exceed three weeks. However, he had the privilege of renewing all loans. The psychological effect on the students was, to say the least, energizing and inspiring.

In addition to our section of shelves dealing with the comics, we put up posters of Superman and Donald Duck and Bugs Bunny recommending good books. Art students drew comic sketches that touched the highlights of popular titles.

We learned as much, if not more, about the comic world as our young readers learned about the wonderful world of good books. Again and again students expressed amazement over the idea that a teacher would take time out to read the comics. We not only read them but circulated comic books in the library. We carried ten copies each of True Comics and Calling All Girls.

Frankly, if we really are convinced that our world of books is superior to the comic world of our young people, then we can only conquer their world by invasion. As far as we at Kern Avenue Junior High School are concerned, the invasion has already begun!

REMEDIAL READING FROM THE STANDPOINT OF THE COUNSELOR

Ruth Close, Elementary Counselor, Los Angeles City Schools

The position of the counselor in a program for remedial reading may be best understood by describing his function in any well-rounded program of education. Professor Donald G. Paterson, of the University of Minnesota, and his collaborators, have conceived the counselor to be a person who attempts to obtain a picture of all the complex lines of influence which bear down upon the individual student in order that the student may be helped to adjust to his present problems and plan wisely for future activities.

As some degree of reading ability is an ever-present necessity in school

life, as well as in most future activities of a pupil, the counselor is at once confronted with the importance of discovering all of the influences which bear on the reading situation. It is difficult to conceive a happy, fully-integrated personality without some degree of proficiency in reading. Quite certainly, a pupil may be able to excel in physical and manual activities, or even social relations, without reading ability, but frustrations incident to poor response in his major academic subject are in constant danger of being carried over into other fields and his so-called "good" adjustment rides on the brink of disaster. Probably each teacher present can cite at least one instance of a pupil whose achievement in reading was practically nil—yet he appeared to react normally in every other way. The counselor who observes a larger number of such children over a longer period finds that the accounts are not all settled at the end of a given semester and the reckoning for general behavior often comes several years hence.

It is the business of the counselor, then, to bring together all of the recorded facts about a child who has been referred because of difficulty with reading, select and summarize those facts which seem to have a bearing on the predicament, and make such suggestions as she thinks will help the teacher. (Techniques for doing this will be considered in a later part of this paper). There will be no magic buttons to press and no immediate transformation in the pupil referred to the counselor. Teachers, and even principals, often expect a therapeutic value from an individual examination. Such statements as "Several children took Binet Tests last year but they weren't any better afterwards" are sometimes heard. Or, it is assumed that the counselor carries with her a set of ready-made answers to the problems of each child. The plea of one principal on several occasions was: "I hope you will be able to tell me some *one* thing—just one thing to do for this child which will assure his success in learning to read." Would that there were a bag of tricks which could be so used; but neither the reading process nor the human mechanism is so simple as to admit that type of treatment. Indeed, a pioneer in the field of experimental psychology said that the workings of the whole stellar system would be easier to understand than the mind of a three-year-old child. And the reading process to which we are about to give reference, is a complex mental function—similar to selective thinking and reasoning, according to careful students of psychology.

It is not our purpose to attempt to discuss the psychology of reading; but a reference point is needed from which to understand a remedial program. We cannot correct a defect in a process if we do not agree on the nature of the process. Let us assume—rather superficially—that reading is the visual reception and understanding of words or other symbolic sensory data. This means not merely understanding the meaning of words alone, but in their relations to *other* words. How often we have heard children say: "I have read the lesson several times but have forgotten it." In truth, they have not forgotten it but they have never grasped the essential relations. This is often true of fluent oral readers. This counselor recalls one such case: an attractive girl of 12 years in Grade V—*slightly* undersize for her age, so that she appeared to be well-placed with her colleagues aged ten to eleven years. Her mental age as measured by Revised Stanford-Binet, Form L, was approximately seven years—yielding an I. Q. in the upper fifties. Because of six and half years of constant exposure to visual symbols, she could recognize most of the words on a printed page of material suitable for fourth

grade pupils. Her teacher was slow to accept her intelligence rating saying: "But have you *heard* her read? Why, I can have her read for my entire class and she holds their attention." It was found that after her "fluent" reading she could recall not over two facts of an entire story several pages in length and those were merely repeated in rote form. Her mechanical process was all that could be expected; her understanding was *also* all that could be expected of a child of her mental age, but not equivalent to that of the child of average intelligence in her grade. It might be added that this pupil had reached her maximum achievement in reading and in social adjustment. Before the end of the school year—during which she had been referred to the counselor for examination—she was showing definite reactions of a feeble-minded pupil.

May it be remembered also that a fluent oral reader is sometimes a *slow* silent reader. A teacher talking to a third grade class (if she talks to be understood) says about 140 words per minute. (That is the rate of a fluent oral reader.) A third grade child should be able to read, silently, material on his own level at rate of *300 words* per minute. This oral reading may be largely a mechanical process attended by vocal inflections which can be imitative rather than representative of true understanding.

Thus far we have tried to describe the counselor's position in relation to total school program and have given brief reference to reading as a complex mental process—involving perception, association and selection. Now, what about remedial instruction?

Warren's *Dictionary of Psychology* describes remedial instruction, in substance, as systematic training . . . which seeks to remove defects or causes of defectiveness. Actual remedial instruction may not differ greatly in technique from *good* general instruction. There is no mystic approach in the class for remedial instruction any more than there is a cure-all in the mental examination to which reference has already been made.

The chief difference between remedial and general instruction, then, lies in understanding the *cause* (or causes) of defectiveness in an individual pupil in order that these causes may be removed or compensated for in the school program. To be sure, individual differences in regular class rooms are great, but usually not *so* great as to make group instruction entirely impractical. Certain techniques, it has been found, are suitable for fairly large groups of children regardless of background. In a class for remedial reading we often find that need for such a program is often an *indication* of some deeper seated disorder which is affecting the child's total development. Any attempt to correct the poor reading, without understanding its causes, is analogous to the plight of a doctor prescribing a remedy for a headache without reference to the disease of which the headache may be an indication. The pain may be alleviated but the disease progresses. For example: Tom, a third grade boy of average intelligence, has spent two semesters in A1, B2 and B3, respectively, and recognizes only two words in Gray Oral I 40-word test. Vision, hearing, and general health have been examined by best specialists and declared "normal." Home is of upper-middle class socio-economic status. Both parents have had some training beyond high school. Mother has confidence in the school; has been cooperative with teachers and principal in have the boy retained in each grade mentioned. Teaching techniques in general have been good. At the end of Grade III, mother decided that she was *going* to have Tom learn to read.

Taking matters in her *own* hands, she hired a tutor who worked with him several afternoons each week. In the evening, one or both parents and elder sister sat with Tom for an hour after dinner and followed classroom teacher's instructions about approach to reading. Tom, in the plight of a boy thrown into deep water without life belt, found his way out and made some progress in reading—but at what cost? He developed a tick and a tendency to stutter. When counselor was called in, Tom mentioned during the examination that he was dull mentally, that he couldn't read and his elder sister was the "bright one" of the family—had always been at head of her class—and it was a great disappointment to his mother that he had turned out to be "dumb." In this case, failure in learning to read was a *symptom* of a functional nervous disorder which was brought to the surface when reading was taught without reference to the feeling of inferiority which was being unwittingly fostered in the home. The poor reading ability would have been much easier to correct than the tick and stuttering, just as it might have been easier to teach a child to swim by the usual method than to correct the physical disorders which *may* have been caused by overexertion during such an experience. We must remember, however, that these are not always the results. Just as hundreds of children have learned to swim by being thrown into deep water, without any noticeable effect when there were no weak spots in their physiques, so have many children been taught to read by pressure methods when nervous systems have been less sensitive. The risk is great.

A good program of remedial instruction requires much more than teaching techniques. Dr. Gates has said in his classes that much reading instruction per se can be taught by prescribed lessons. The teacher's skill is in understanding individual differences and being willing to adapt to them. Don't waste a good teacher's time, he states, on what can be done by a few sheets of paper. It is the counselor to whom the teacher turns for help in *understanding* her individual children, rather than for specific techniques.

What is the counselor's procedure?

First step is the mental examination. Request for this includes teacher's statement of problem presented by child in class room; number of schools attended, length and regularity of attendance in each locality; results of group tests of intelligence and standardized achievement tests; health history as recorded by school physician, and any other significant facts which contribute to total picture of child to the date of request. In possession of these data, the counselor makes the mental examination, usually using the Stanford Binet Tests of Intelligence (Terman-Merrill 1937 Revision, Form L or M; for non-English-speaking or for deaf children, Pintner-Paterson Shortened Performance Scale; and for blind, the Interim-Hayes-Binet Scale, revised in 1942).

The purpose of the individual examination is not limited to obtaining an I. Q., which, taken alone, *may* be of little more value than attaching a number to a name. Observations of the child's reactions *during* the examination by a skilled counselor, as well as incidental conversation carried on before and after actual responses to test items, are often quite as valuable as the objective test result. This is a concept not yet grasped by many teachers and principals; e. g., during the semester just finished a principal of a large school said to a counselor: "I need so much help with a boy, but I don't feel justified in taking your time as I know he has normal intelligence."

Then, too, the actual test-scores should be broken down to show strengths and weaknesses. Two children of the same age and I. Q. often require different treatment in the classroom, irrespective of personality traits. Consider two boys aged 12, each having a mental age of 11 years, 6 months. One boy will do all of the tests on Year X, 5 out of 6 on Year XI; 4 on Year XII. The other boy may have to go back to Year VIII to find his basal year or one on which he can do all of the items, so that if he were to be placed where he would be assured of being able to do *all* of the things that the average child in his group could do, he would be with children with mental ages of 8 years. However, he can do a few things on each level up *through* year XIV—two years above the level of the highest performance of the first boy. It is the business of the counselor to call the attention of the teacher to the gaps in the development of the second boy and note what specific abilities may be lacking. Such analysis of composite test scores can be of considerable value.

As our particular interest at present is in reading, we give brief reference to some of the test-items on which poor readers frequently fail. *(1). Vocabulary.* If speaking vocabulary is limited, it is obvious that the pupil cannot be a prolific reader. On the contrary, we have students who have excellent speaking vocabularies but cannot read well. When this is the case, we can be fairly sure that the difficulty is purely in the mechanics of word-recognition and may be treated rather easily. It is interesting to note that the vocabulary test in the revised Binet has a higher correlation with scores of general intelligence than any other single item in the array. *(2). Word Naming test.* Ability to name a large number of different words in one minute in Year X (Form L of revised Binet) may show something about a pupil's method of associating words. *(3). Memory for Designs.* When a student is unable to reproduce a design accurately, his perception may be faulty or his recall inaccurate. Many cases of mirror writing, tendencies to see things upside down, or other types of distorted images are discovered by this performance. *(4). Word Rhyming Tests.* Implications are obvious in responses to questions asking for words which rhyme with other words. Inadequate teaching-techniques are often brought to the fore when a child responds with a non-sense syllable which rhymes with the sample word rather than a real word. In such a case, too much emphasis may have been given to the sound rather than to meaningful words in which like sounds are contained. *(5). Verbal Absurdities and Comprehension* of items read to the child by the counselor, of course, show the ability a student may have to grasp meanings and select relevant facts, these being irrespective of items which the pupil is required to read for himself.

Extension of these analyses could continue ad infinitum, but we trust enough have been given to show the diagnostic value of the *individual* test of intelligence.

Following the mental examination, there should be a series of interviews before attempt can be made to determine the real cause of reading disability. These include talks with principal and teacher, amplifying what has been stated in formal request for examination; conferences with parents, doctors, social workers or any others who may have touched a child's life and affected his experience in order that—as stated in our opening paragraph—the counselor may obtain a picture of all of the complex lines of influence which bear down upon the individual student.

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When the counselor has determined what she thinks are the contributing causes to the reading disability, she is at once aware that they fall into two classes; those that she can do something about and those that she can't. As every one here is familiar with long lists of causes for poor progress in reading, we shall not repeat them; but we do wish to call attention to some of the general procedures indicated once the causes are brought to light. If vision is faulty, glasses can be prescribed; when hearing is deficient, the child may be given a hearing aid or seated with reference to his hearing range; if perception is faulty, more exposures can be given; when vocabulary is limited, this can be easily remedied. The solution of the whole problem, however, is not so simple. There are the large number of factors beyond the control of the classroom teacher or counselor: disturbances in the home; separation of parents; over-anxiety of mother for the child's progress; ridicule by, or unfortunate comparison with, siblings, other relatives, or children of the nearest neighbor. Sometimes these conditions can be *improved* by efforts of an astute counselor, seldom cured; the reason being that behavior patterns of adults in whose care children are entrusted, are set in such a way as to make modification difficult.

There is a frequent suggestion that the parent herself or even the teacher had had emotional disturbances comparable to those of the child in question, yet she learned to read and made satisfactory progress in school; therefore, it is difficult to understand why such factors are important. Grant this is true, yet two children can be exposed to scarlet fever; one takes it, the other remains well. The physical condition at the time of exposure was the determining factor. So, the nervous organization of one child at a given time may admit learning under circumstances that would prove a definite block to another pupil, though native ability and desire to learn were equal in both.

Then we wish to call attention to the fact that reading disability can *seldom be traced to a single cause*. Usually there are a number of interdependent causes. For example: Doris, aged 8, of normal intelligence, has been under excellent teachers in a modern school for three years and has not learned to read. It is found that she had a vision loss sufficient to retard progress, has been irregular in attendance at school, though no physical defects, other than vision, were found. She lived with an apparently unstable grandmother who visited the classroom frequently, found fault with teacher, and reprimanded other children going to and from school, much to the embarrassment of Doris. She wouldn't let Doris be seated in the classroom with reference to her vision loss because that would "single her out" and she wanted her to be treated "like other children." She kept Doris out of school when she was disgruntled at the teacher. It can be seen that the vision loss, the poor attendance, and the behavior of the grandmother were all contributing factors, and could not be effectively dealt with alone. What could be done? Theoretically, we say to correct the ones which were possible to correct and attempt to compensate where correction seemed impossible. In the case of Doris, we could and did correct the vision. We couldn't correct the grandmother; but we were able to find some things that were lacking in the grandmother's experience which made her react to her surroundings as she did. By trying to compensate in a very small way for some of these, life for Doris became smoother at home and at school, and attendance bettered and improvement in reading began. At times it is

practically impossible to touch lives of adults, in which cases the compensation has to be made directly to child.

Can the teacher do this without the aid of the counselor? So far as her ability is concerned, the answer is yes. But her position in the school often renders her impotent in being of real assistance to a child or his family. There is a time-worn tradition among many parents that any individual within school walls is prejudiced against a pupil if that individual recognizes the pupil's problem. With a few rare and noteworthy exceptions, parents feel that when a teacher wishes to discuss the problems of a particular child, she is doing so with reference to other children in the group, which she thinks are better endowed. As teacher you may not be as aware of this attitude on the part of parents as the counselor whose position is unique in this respect. A parent usually feels that he can talk more freely to someone from a central office whose knowledge of a child's background cannot alter her behavior toward him in daily contacts of the classroom. Many teachers *have* done admirable pieces of work in case studies when services of the counselor were not immediately available, but it is an Herculean task with the size of most classes at present.

Attention of teachers should be spared for (1) learning as much as possible about the majority of her pupils for whom individual examination is not necessary—their interests and abilities, favorable and unfavorable factors in their lives in school and out; and (2) for working out specific techniques from suggested methods of approach, given to her by the counselor. For example, the counselor finds that excellent teaching techniques have been consistently used, yet the results fell short. The teacher may have worked out a beautiful background of experience for a given lesson in reading which proves complete and sufficient for the group; but for one pupil the associations are not strong enough, so that the previous experience and the new material do not synchronize. To see that this synchronization takes place is not molly-coddling the child. Few think so these days, but the one who does is out of line with the most important laws of learning. A boy recently called at our door taking subscriptions for magazines and orders for Christmas cards. It was noted that he handled his accounts in several operations with accuracy and facility. After asking about his school affiliation and grade, we remarked that arithmetic must be very easy for him. "Oh, no," he replied. "I get very poor marks in arithmetic." "Then how does it happen that you keep your accounts so easily?" "Well," he said, "You see, the problems in the book are all about Mr. A. and Mr. B. I don't know them. They don't seem real to me and I just can't seem to get the hang of what they're doing." Remedial treatment in arithmetic would have been a simple procedure for this boy, had this fact, which he hadn't thought worth telling to his teacher, been known.

Sometimes the counselor discovers during an individual examination that a given child needs more repetition of material than most of his classmates. Until very recently, our well-accepted texts have fallen pitifully short in this respect. About ten years ago, review was made of ten standard first readers (not primers or pre-primers). It was found that they contained 3500 different words. Only 100 words were common to all; 600 were common to five. The child had only 100 words that he could carry over in ten books. Another study of second grade readers showed that the average second reader of that time contained about 1500 different words; 63% of

these occurred *less* than four times in a book. Hence, two out of every three words he would see approximately once a month in one book. At this same time Dr. Thorndike stated that the average first reader contained one new word in seven, and a first-grade child can, with ease, take care of one in 60 to 120 words. Consider yourself: how discouraging it would be to have to stop and look up every seventh word in a dictionary. We recently looked over several of the most recently published second readers and found considerable improvement in this respect. There occurred one new word in 35 and the new words were given a minimum of five repetitions. These figures are not given to be remembered; but merely to call attention to the fact that the teacher must evaluate her remedial material with a view to repetition. The position of the counselor does not require her to dictate *what* material a teacher shall use for a given child, but to show that the child will be in need of a certain minimum number of exposures and the material he uses should be evaluated in that light. This is often a weakness in lesson material dictated by child from his own experience and activities.

In closing, we should like to make reference to the number of cases referred for remedial treatment in reading and some of the effects of non-recognition of these children. During the school year just closed, about 35% of cases referred to this counselor for individual examination were in need of remedial help in reading—that is, achievement was more than one and one half years below expectancy. Approximately one-half of these were referred for other reasons, such as unfavorable behavior in the classroom, which was later found to be compensatory for poor achievement in reading; and because of spuriously low ratings in group tests of intelligence due to a pupil's inability to read. How often every counselor receives calls to examine a "sub-normal" child who must be transferred to a development class at once because his performance on National Test of Intelligence was too low to score! Upon individual examination, the counselor finds that the child has average intelligence and often better, but has been unable to read the questions. Think of the possible effects on the personality of a child who is considered subnormal because he hadn't learned to read.

There is no assurance that the cases referred to a counselor represent the total number of children who are in *need* of remedial help in reading. The tendency to confuse good behavior with achievement is still a common classroom condition. If a child sits quietly, doesn't bother his neighbor, and copies meaningless symbols neatly, his real plight may go unrecognized for long periods—probably until the next school survey brings it to the surface. Each year, however, shows increase in the tendency toward early recognition of specific disabilities in reading. Concomitant with this is the effort to educate the general public regarding individual differences in reading ability and to dispel the idea that inability to read represents inferior intelligence in a child. Articles have appeared in at least two magazines of wide circulation this spring: one describing the work of Dr. Buswell of the University of Chicago, in *Good Housekeeping*, June 1944, and another, entitled "Dyslexia," in the April 10 issue of *Life*, describing work being done at the Clinic at Northwestern University. Specialists may not agree as to the value of all techniques described in the latter article, but the great value in all such articles lies in arousing interest of the public.

A dentist once said that any particular type of dentifrice probably has never saved a tooth but advertisers have rendered a real service in keeping

the public aware of the need of dental care. If publishers of literature for laymen can help to spread the gospel of hope for the unfortunate child whose road to reading has been a rocky detour, through early recognition of the difficulty and an open-minded attitude without the usual frustrations attending failures in school subjects, the value of their existence will have been greatly increased.

The purpose of the counselor in relation to the program for remedial reading, as stated in the beginning, is to make an impartial analysis of all of the complex lines of influence which bear down upon the individual student, in order that the student may be helped to adjust to present problems and plan for future activities. In doing this, we have tried to point out that the counselor has no magic buttons to press; that there can be no immediate improvement as a result of an individual examination; that the counselor is not a specialist in teaching techniques; but that she should be a specialist in discovering causes for failures and in suggesting *directions* of approach; that her position is usually more favorable than that of a teacher for interpreting problems of atypical children to parents; and her opportunities for educating the public to the need of early recognition of reading disabilities and suggesting possibilities for remedial treatment, are great. If she fulfills her obligation, she will have made possible richer, fuller living through reading—which is the *right* of every child.

THE MATURING HIGH SCHOOL READER

Mrs. Blanche L. Garrison, Coordinator of Fundamentals, Dorsey High School, Los Angeles

Whenever the reading problem is mentioned to school people, it is assumed to be the reading problem of the slow or foreign child. Seldom is the reading problem for the average and above-average pupil considered. Actually, however, it is a very real one and requires a philosophy and technique somewhat different from the remedial approach.

Perhaps certain philosophical and psychological principles should be established first. For people who wish to lead "the good life" reading must be a way of life. To be well-informed and cultured, a person must read. He must, moreover, have been a good reader at the outset of his school life, and he must continue to read systematically all the rest of his life. The person who is not an able reader in the elementary school is handicapped all through his formal training, and he will not be a reader in his adult life. Not only is his English work inadequate, but his social studies, science, and

mathematics suffer also. He feels his lack, and conflicts within his personality result because his reading problems are so much with him. Evidence to support the statement that the able student should be accelerated at least two years in reading in order to realize his full intellectual power may be found in the advanced composition classes of many senior high schools. Almost without exception the student who is only at or slightly above his grade level does mediocre work in his general English and social studies classes. Indeed, reading ability and the power of self-direction seem to be greater factors in successful school attainment than does intelligence, granted that the child's intelligence is at least normal.

These facts help to establish the second principle that reading can not be a technique apart from other language skills. Spoken and written English are made easier when the student is a good reader. When can topic sentences be better taught than at the time the pupil is learning to find them in his reading? When can paragraphing be better understood than at the time he is reading well-constructed paragraphs? Perhaps the greatest problem in an advanced writing class is to find suitable topics for compositions. If the student is "a reader," he has little difficulty. The poorer reader, however, seldom knows what to write. Unless the able student has a good reading background, he resorts to mere opinion in his writing and speech, or he chooses some bromidic topic such as "My First Job" or "A Camping Trip." Reading, writing, and speaking are inextricably dependent upon one another. If one be more important than any other, it is reading.

For the able student the reading program must be made more interesting and more vigorous than it now is. Without destroying the philosophy based upon the importance of the individual child, it is necessary for the school life of the individual to be coordinated more effectively. At present there is so much that is repetitious, much learning is boring. For instance, safety and health units have been with the student since kindergarten; yet there are no more reckless drivers than the high school boy who with cars over-loaded drive to football games. The remedy is not more safety instruction, but better instruction. The same goes for certain aspects of English instruction, for often the student is lulled into a semi-conscious state. Certain aspects of grammar should be assigned to certain grade levels and should be repeated only at well-spaced intervals so that the student's increasing maturity may be used in the learning process. Consider the parts of speech! How many times does a student "learn" the parts of speech during his twelve school years? Actually he doesn't need to know much about technical grammar to be a good language student. Once he is freed from the repetitious qualities of the English instruction, he will have more time for the more mature aspects of his language development. Every term should emphasize something new and worthwhile to meet the student's increasing maturity.

Each senior high school in cooperation with its contributing junior high schools must set up such a program designed to meet the needs of the students in its district. No city or state wide program can meet the varying needs of its component districts.

Essential to the mechanics of this program is the realization that in spite of everything the teacher may do, there is and always will be a certain percentage of the students who will not or are not able to learn language skills. Are the others to be held back forever while hopelessly repetitious

work is presented? For the good of the larger group it is better to move on and at the same time try to substitute more desirable individual work for those who can not keep up with the group.

In a coordinated language program for the able student reading skills and study habits are inseparable. One is unattainable without the other. It is necessary for the student to be reminded continuously that he must devote a certain amount of time in preparation for his school work depending, of course, upon his individual abilities and goals. Certain simple study recommendations can easily be made, commented upon by the teachers, and taken home for parent conference. Dorsey High School has a four-page folder which illustrates a good procedure for this.

Further general instructions can be given briefly to each class and applied to the specific subject. For instance, these topics might be presented:

1. When and how to change reading rates
2. How to increase reading speed
3. How to find the author's plan
4. How to increase vocabulary
5. What to bring to the assignment
6. How to evaluate and apply the material studied

The average and especially the above-average pupil can and should do a vast amount of collateral and free reading in the eleventh and twelfth grades. In this aspect of the instruction, the teacher's personality and reading interests are all-important. Intellectually he must be vigorous and robust; he must be sincere in his acceptance of his pupil as a young adult giving due consideration to his opinions and reading tastes; and above all else he must be an enthusiastic and inveterate reader himself. Many a teacher gives only lip service to reading and learning and his pupils know it. In addition to an understanding and an alert teacher, it is essential that the student have timely adult books available. Many high school libraries are too juvenile and too censored for the able student. Likewise the public libraries are often foolish in their attempts to regulate the student's reading. Surprisingly few high school people need such sheltering. The movies have enabled them "to take" almost anything that good literature can offer. It would be much more to the point for the parent, the teacher, and the minister to insist upon the young person reading material sufficiently and increasingly mature and well-balanced as to the kinds of literature. For instance the well-balanced reading list will minimize the reading of abbreviated magazine articles, the popular, pseudo-scientific magazine stories, the silly women's magazines, the "whodunit" mystery books, and substitute in their places the excellent contemporary books, some of the best books of all time, without which the student is hopelessly unlettered, and some books from the various types of literature—drama, poetry, novels, history, biography, and philosophy.

For the student, then, who would attain "the good life," learning can not be canned or capsuled. It is most easily and pleasantly attained by wide, enthusiastic, and continuous reading. The teacher must be ever-mindful of the individual student's needs, but he must not pander to the cheap and sensational influences which beset the student in many of his out-of-school contacts. If not in school where will he find the way to "the good life?"

MATERIALS ON SCIENCE IN READING

Theresa Johnson, Elementary Counselor, Los Angeles City Schools

Were it not for the increased interest in democratic education as contrasted with the traditional school and its way of teaching, we would not be here today to think about using our daily science experiences as reading material.

The traditional school was based upon the idea of content for content's sake, rather than upon the democratic idea of values to the child and to society. In 1903, Dewey's philosophy in *Democracy for the Teacher*[1] received little attention and had little effect upon education; today, modern education is based upon his philosophy that education is life rather than preparation for life. The elementary school is undergoing great changes—a new type of thinking is developing in relation to content. The traditional idea of subject matter emerged into the activity concept or "progressive education" of which Dewey has been considered a staunch advocate. However, in his book, *Experience and Education*[2], he defines education in terms of experience but criticizes progressive education as lacking in organization of subject matter. He states definitely that the school must find the material for learning within the experience of the child and there must be progressive development of what has already been experienced "into a fuller and richer, and also more organized form."[3] To accomplish this, he says, in part[4]:

1. Give new experiences and develop greater skill in dealing with things already familiar.

2. New objectives and events must be related intellectually to those of earlier experiences.

3. Therefore, select those things within the range of experience which have the potentiality of presenting new problems which, by stimulating new ways of observation and judgment, will expand the area.

4. Each accomplishment must be regarded not as a fixed possession, but as an agent or instrument for opening new fields.

Bode also says that in order that progressive education remain true to its democratic point of view, "the day-by-day experiences of the pupil must be made over in a certain way, through living and doing," and thus the theory of learning and the theory of social organization, implicit in progressive education, become inseparably entwined."[5] From the "activity" concept has come the thinking of broad areas of experience and very recently that of the double sequence curriculum, consisting of activity and drill sequences. This concept is the basis for the science unit which will be discussed.

During the last fifteen years, the place of science in a democratic society has been given considerable consideration. The Thirty-first Yearbook presented the trends toward reform against traditional practice. The advent of "general science" instead of specfic subjects in the secondary school has done much to influence the place of science in the elementary school. The N. E. A. Proceedings of 1935 expressed the possibility that the elementary

school would sometime include much that has been included in the general science courses in the junior high schools.[6]

The first serious and scientific attempt to define a curriculum in terms of the emerging philosophy was undertaken in 1927 by Craig,[7] of Columbia University and the Horace Mann School. This resulted in the publication of the *Pathways in Science* series of readers in 1932, emphasizing a continuous unified program of science in the elementary school. Since then considerable material in science has been available to the elementary school. In 1940-1941, *New Pathways in Science* appeared, with a preface stating that the new series "brings a systematic program of science to the elementary grades" and "is in harmony with the latest thought in science" and later, "its philosophy is in keeping with the newer trends."[8]

Practically all of the school subjects in the curriculum have been similarly attacked from the standpoint of content. Reading, as a school subject, if it can be called a separate subject, stands apart, in that it is an integral part of the subjects attacked and its content is derived from other school subjects and from life itself. Actually, reading as a separate subject does not exist unless we consider reading only as mastering the mechanics. Considering it in a broad sense as, "a way of life," all of the content is derived from the other fields, whether it be science, history, music, art, or social relationships. Our simplest primer usually begins with social relationships.

Viewing "units of work" from Dewey's philosophy that education is life, a unit is selected from life experiences of the pupil and all of the subject matter and reading are utilized for "progressive development of what has already been experienced into fuller, richer, more organized form."[9] The success of a unit of work, except in the lowest grades is largely dependent upon reading for considering problems, clarifying thinking, and for verifying solutions.

Many elementary teachers are reluctant to undertake the teaching of science units or, shall I say, units involving science, because they consider themselves inadequately prepared in science. The teacher need not be a scientist to teach science in the elementary school. The teaching of science is no different from that of any other subject. The wise teacher today provides opportunity for class discussions to stimulate questions, to challenge one another's ideas, to open new avenues for further discussions, and to stimulate further reading in order to arrive at satisfactory conclusions. She is not expected to offer immediate solutions. Craig says "a teacher should not regard herself as a sort of clearing house or encyclopedia which glibly answers all questions coming out of classroom situations."[10] Moreover, pupils continually ask questions and are concerned over problems for which scientists themselves very often have no solution.

The science material in reading which I have selected for discussion today is in the field of aeronautics. Justification for such a unit can be found by turning again to the philosophy of modern education. Is the material drawn from the life experiences of the child? To answer this we have only to consider the present world situation: planes are seen and heard overhead every day; fathers and other relatives of our pupils are in the service; daily conversation is about the war; allied and enemy planes, model and toy airplanes are in the stores; and is there any teacher here whose pupils are not drawing airplanes in their spare moments or imagining

themselves piloting planes? The identification of planes is already a part of many school programs. As for the question, is the unit based on the child's interest? I believe we can say that this has already been answered. Does the material provide for progressive development? The reading material selected for this unit is from the *New Pathways in Science* series. It has already been stated that the purpose of this series is to present a systematic program of science in harmony with the latest thought in science and in keeping with modern educational philosophy.

Practically every boy longs for the time when he can pilot a plane. The Civil Aeronautics Administration does not grant a student-pilot license until the age of sixteen and a pilot license until eighteen years. Therefore, it will be years before our elementary school childrn can operate planes. At the present time, the United States Government recognizes the need for intensive ground training before a cadet is allowed to operate a plane. Extensive training is given in the understanding of weather conditions: how to fly safely, how to avoid flying hazards, what to do when encountering bad weather, et cetera, in order to prevent accidents such as were common in years past. If we look back upon some of the serious airplane accidents in past years, we recall that many were due to fog and other weather conditions rather than to faulty construction or operation. Most of us operate automobiles but know very little about the detailed functioning of the individual parts. If the world of the future will be one in which airplanes for personal use will be common and we who are driving cars may own airplanes, we will probably master the mechanics of operation as we have those of the automobile but we will have to have an understanding of flying conditions in order to avoid danger just as we now avoid slippery and muddy roads, sand, and soft shoulders, when driving a car.

Our air hazards will consist of clouds, fog, thunderstorms, etc. Therefore, this unit will deal with the meteorological elements affecting aviation, leaving the more technical aspects and the mechanics of operation for the secondary school when the student has had experience in physics and a greater knowledge of mathematics. The meteorological elements with which a pilot must be familiar are these: temperature, humidity, pressure, wind direction, wind velocity, clouds, precipitation, weather, visibility, and ceiling. All of these with modification for maturity are within the comprehension of the elementary school child.

The selection of the reading material for this unit if from *New Pathways in Science*, and has been based upon the manuals of the Civil Aeronautics Administration and the War Department. Most of these manuals are too technical for elementary school children but afford information in a condensed form, valuable to the teacher.

By this time, you no doubt are wondering how meteorology can possibly be taught to first grade children who are beginning reading, or teachers of remedial reading are wondering how it can be taught to children with little or no reading vocabulary. The answer is found in the outline which is to be presented; suggestions are made for pupil experiences which include observations and experiments. Only the first three books in the series are included, because together they contain reading material on the ten meteorological elements mentioned. The outline is far from complete but it is intended only to offer some suggestions for each topic which can be enlarged upon from the references supplied.

We Want to Know: This first book of the series contains reading material on the meteorological elements of precipitation in the form of rain, snow, and ice; temperature; warm and cold days; and clouds.

Suggested Experiences

Rain, Snow, and Ice: Watch the rain. Is it falling slowly or fast? Is it coming straight down? If not, why? Are the drops large or small?

Set a pan outdoors. What happens to the rain? What will become of the rain? Where does rain come from?

Look at the sky. What do you see? Is the sky blue or gray? How does it look on sunny days? Bring some snow or ice into the room. What happens to it? Why?

Then place it outdoors. What happens? What happens to the water in your refrigerator trays?

Warm and Cold Days: Go outdoors. Where is it warmer? Colder? What makes the earth warm? What can we look at to see how cold it is?

Look at the thermometer; see the red line. Now place it near the radiator or in the sun. What happens? Place it in the shade. What happens?

Clouds: Look at the sky. What do you see? Are the clouds moving? What color are they? What do you think makes them move?

We Find Out: The second book in the series contains reading material on the meteorological elements of wind, temperature (including the use of the thermometer) and precipitation in the form of rain.

Suggested Experiences

Wind: Look at the trees. What makes them move? Look at the sky. Are the clouds moving Do they all move the same way? Why? Do you feel the wind? Where do you feet it most? Is it easy to walk when it is windy? Wind pushes us. Will you go faster if you feel it on your face or on your back?

Look at the plane in the air. Does the wind make it go faster or slower? Why?

Feel the breeze. Breeze is wind. Why do you think it is called a breeze instead of a wind?

Temperature: Is it warm or cold this morning? How will it be at noon? This afternoon? What shows how warm or how cold it is?

Go outdoors. Where will it be warmer? Cooler? Stand up on a high chair. It is warmer or cooler near the ceiling?

Precipitation (Rain): Look at the sky. How does it look? What clouds mean rain?

Look at it on a sunny day. Do the clouds look the same as when it rained? Do the clouds appear to move? Do you see any clear blue sky?

How far can you see today? What will become of the rain? If it were cold what would happen to the rain?

Changes All Around Us: The third book in the series contains materials on the meteorological elements of precipitation (extended to include fog and thunderstorms,) visibility, clouds, ceiling or sky cover, humidity, wind, temperature, and state of weather. With this book, all of the ten meteorological elements have been introduced to the pupil. The experiences suggested for each of the other books will not be repeated here unless necessary to show the progressive development of the additional experiences listed.

Precipitation: Which forms of precipitation do you know? Which do you think are most dangerous to flying? What should a pilot do if it is

very foggy? See if you can tell the difference between rain, snow, ice, and fog.

Visibility: What does visibility in aeronautics mean? Go outdoors; see how far you can see. Why do you think it is important for a pilot to know the visibility?

Clouds: Observe the sky. See how many different kinds of clouds you can see. Do they all look the same?

Look at the highest clouds. Find out what they are called. See the clouds with the curved top. Find out their name. Look at the sky on a rainy day; how do the clouds look? What are they called?

Look at the chart of the clouds and see if you can find the ones you saw. Which clouds would be best for flying? If you were flying a plane would you fly through a cloud? Why not?

Ceiling, or Sky Cover: You know what the ceiling of a room is. What do you suppose a pilot means by ceiling? Look at the chart. How would you show ceiling or sky cover for today?

Humidity: Air is all around us. Can you see air? See if you can tell what makes up the air.

Look at the window sill. Why is there dust? What else have you seen in the air? (Experiment to show moisture in the air.)

Wind: Go outdoors on a windy day. Where do you feel the wind most?

Hold a piece of paper in the air. Which way does the wind blow it? Look at the trees. Do the leaves and branches lean the same way? Which way is the wind coming from? What direction is it? (Show how wind direction is indicated on a weather map.)

Find the wind arrows on the weather map. How fast do you think the wind is blowing?

Temperature: Look at the classroom thermometer. What does it say? Read the number.

Place the thermometer outdoors in morning and afternoon. What does it say?

If we place it in a refrigerator, what will the red line do? If we place it in the sun?

Pressure: Weigh yourself on a scale. How much do you weigh?

Air has weight or pressure. Can you feel the air now? Have you ever gone to the mountains? Did you feel the same?

State of Weather: See how many different kinds of weather you know. How does the chart show a clear day? Rain? Snow?

You will note that from the simplest experiences suggested from the primer reading material there is gradual development into elements which are more difficult for child comprehension together with the interrelationships of the elements, and a gradual development of aeronautical vocabulary.

Based upon the emerging idea of activity and drill sequences, it is suggested that for the drill sequences to accompany the activity sequences just described, the pupils themselves suggest the material from their experiences. For the first book, the drill sequence would necessarily consist mainly of oral questioning; for the second, simple questions dictated by the children and typed, to be read later by the pupils and answered orally; for the third, which completed the list of the ten meteorological elements, material dic-

tated or written by the pupils, to be typed and later used for quick drills, might be of varied form such as the following:

Rain is————————.
It is dangerous to fly when it is ————————.
What color are rain clouds?
Cirrus clouds are rain clouds . . . high clouds . . . low clouds.
Would you fly through a cloud?
Ceiling means ———————— ————————.
There is ——— and ——— in the air.
Name four kinds of weather.
Wind can make a plane go ———— or ————.
Draw an arrow showing a north wind.
The thermometer tells us how ———— or how ———— it is.
What would it say if it is freezing?

Many more aspects of meteorology can be comprehended by the elementary school pupil, such as the circulation of the air, the distribution of temperature with height, gravity, and the coriolis force, air masses, the Beaufort scale, weather maps and sequence reports. The sixth book, *From Sun to Earth,* deals extensively with weather and weather conditions, the use of weather maps, making weather maps, and a school Weather Bureau. All of the books provide excellent reading material on celestial bodies for a unit in celectial navigation, but since this division of aeronautics requires observations at night and the solution of problems require mathematical knowledge not possessed by elementary school children, it has purposely been omitted.

Reading is effective as a learning process in proportion to the purposing of the learner. Experiences in science afford rich opportunities for purposing.

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HOW I TEACH READING TO DEFICIENT READERS

Ruth F. Staff, Adjustment Class Teacher of Remedial Reading, Melease School, Los Angeles

One day, not long ago, a mother brought her son to the adjustment class for the first time explaining, "Philip just doesn't take to books."

Philip looked about him with interest at the group of twenty-four children, mostly boys like himself, who had been classed as "misfits" in regular school rooms. They also had been unable to learn to read and yet almost everyone had been endowed with normal or superior intelligence.

"May the new boy play on our team?" was the first question asked by several members of the class. Philip's facial expression changed immediately. He actually seemed to grow taller. Why, here were children asking for his companionship, when no one at the other school had cared to play with him at all. In fact everyone had been against him, including the teachers who just couldn't find any good in him, his mother reported.

Before the close of the day Philip began to think that his worries about learning to read were needless, as several times he was informed by older members of the class that they had been much worse than he and "Just look at us, now. We'll soon be ready to leave the room and return to our own grade."

Little did the class realize that they had given Philip what he needed most of all; confidence in both himself and his classmates and a knowledge that he was wanted, that here was a place where he belonged.

UNDERSTANDING THE CHILD

When a child enters the adjustment class, a careful study is made of (1) his physical condition, (2) his intellectual status, (3) his social status, and (4) his emotional nature.

Symonds says, "The physical machine should be put into good running order as a prerequsite for satisfactory adjustment of that machine." With the aid of the school nurse and doctors, the child's defects are detected. Perhaps he is in need of glasses, or should practice special eye exercises. The

Snellen Chart Test is inadequate for testing the vison of a deficient reader. Therefore, a telebinocular test is given to each child whenever possible by the school specialist. It detects refractive errors of vision such as eye-muscle imbalance, depth perception, size and shape of ocular image and others which cannot be discovered by the chart.

Possibly he has impaired hearing. He is then enrolled in the lip reading class, and so placed in the classroom as to enable him to hear well.

If he has a speech impediment he attends the speech class which is taught by a special speech teacher.

Often there is a glandular imbalance, diseased tonsils and adenoids, or malnutrition.

Through conferences with the parents plans are made for the formation of good habits of personal hygiene, plenty of rest, at least eleven hours of sleep every night, a well rounded diet, plenty of exercise, and an elimination of over stimulating radio programs.

Rest is provided at school for those who require more than the normal number of hours of sleep.

The need of proper rest and diet is illustrated in the case of Ray. Ray was a boy of eleven who found it difficult to make any notable progress in reading during the first semester. Upon investigation it was found that he was spending every night at the movies, while his parents worked. His dinner was obtained at the corner drug store and was anything but well-balanced. He would arrive at school early in the morning so highly stimulated that one could hear his voice above all others on the grounds. Several times throughout the day he would remark that he was so tired he could not work. This year there has been a complete change in the boy. He has had constant supervision, plenty of rest (no movies on school nights), good wholesome food, together with a little love and understanding. His entire outlook on life has changed. Needless to say his reading has also improved.

The second step in the study of the child is to discover his intellectual status. Bassett says, "Some children when faced with continued demands at school and at home for success in work which is beyond their mental capacity, react to the pressure upon them by delinquent behavior."

In order to know what achievement can be expected from each child, a Stanford Binet Revised is given by the Special School Counselor. His attention span, memory and learning ability, his reasoning powers and common sense judgment are noted.

Achievement tests in reading are given the first few days after the child enters. Errors are observed during the administration of Gray's Oral Reading Test. Such errors may include substitution of words, repetitions, additions and omissions of words and sounds, faulty vowel and consonants, reversal of letters, words, or of sentences, mispronounced words, and words not attempted. Each error is a symptom of a special type of difficulty.

To the children who test below fourth grade level in Gray's Oral, Gates Primary Type I, II and III, and the Progressive Primary Silent Reading tests are given. Those testing fourth grade and above are given Gates Silent Reading A, B, C, and D, also the Progressive Elementary Reading Test. At the close of the semester or when a child indicates readiness to return to his regular class, the same tests in another form are given again.

Thirdly, a study is made of his social status.

A majority of the children who are deficient in reading are socially mal-

adjusted. Conferences with the parents help to discover (1) what methods of handling have produced the child's behavior symptoms, (2) what his emotional relationships are with the parents and other members of the family, and (3) what recreations are enjoyed by him out of school.

It is the environment which predominates in molding attitudes and determining behavior. Therefore, in controlling his environment we hope to enable the child to find an outlet for his social tendencies in enterprises that are constructive and cooperative. This is done by promoting a feeling of social security in each child, by providing a definite room responsibility for each child, by organizing teams so that every child has a definite place on them, by providing opportunity to discuss such topics as "courtesy" and "sharing" when the occasion arises, by having class government in the room, and by creating an interest in outside organizations. "The very best indices of child adjustment," says Morgan, "are to be found in the attitude of the child toward other persons and in their attitude toward him."

Lastly, the child's emotional nature must be understood. A child in need of remedial reading is emotionally unstable as a result of repeated failures to learn. Too often he has seen his associates surpass him, until finally an emotional blocking is built up between himself and everything that pertains to reading. Bassett claims that, "Misplacement and failure in school or the demands of a school program unsuited to the needs and abilities of individual children often result in general nervous tension, restlessness, vague fears, stuttering, chronic psychological moods of depression, keen sense of failure and unworthiness, and habits of failure which are likely to handicap the child for life."

These children can be classed as (1) the Fighting child who is antisocial, curses, bullies, and kicks, (2) the Ego-Centric child, who disdains people, is pampered, acts shabby socially, and has no respect for others, (3) the Retreating child, who day-dreams, worries, is morbid, shy, and shows self-pity, (4) the Nervous child, who twitches and fidgets, drums feet and fingers, stammers or stutters, bites fingernails, tosses and turns at night, vomits frequently, (5) the Inferior child, who is spiteful of others, worries unduly, remarks slurringly about accomplishments of others, talks loudly, pouts, shows extreme timidity, (6) the Fearful child, who blames others, lies, and runs away from home.

Through friendly talks with the child the inner feelings, worries, fears, and attitudes are discovered. This is not done in a day, but has to be carried over a long period of time, depending upon the nature of the child.

Parents so often help to create these disturbances, as can be seen in the case of Albert. At the close of Albert's first day at school he asked, "Am I going to pass?" This same question was asked every day for a week. When the mother was called in for a conference it was discovered that she had pleaded with him everyday to work hard so that he would pass. Albert was a nervous child who seemed to use every muscle in his face when he attempted to talk or read. When the mother realized what was happening to her son, she promised to encourage rather than threaten. As the fear of failure left Albert, both his speech and his reading improved. "Even the Sunday School Teacher notices the change in Albert," remarked the mother at the close of the semester.

After carefully analysing all of the findings at hand an attempt is made to select the factors in the child's life which has contributed to producing

his problem. It may be physical, psychological, social, emotional, or it may involve some of each of these.

TEACHING READING

Reading is the most important skill taught in our schools. It is necessary to be able to read in order to solve arithmetic problems and to work in all science and social studies fields. Children who cannot read are handicapped throughout their lives.

In order to teach reading to maladjusted children it is important to consider first the atmosphere of the room in which reading is to be taught.

The lighting of the room is of utmost importance. It should be well lighted but not glaring. Desks should have a dull surface so as to prevent a glare, also. The child should never face the light while reading, or sit so that the sunlight falls on his book. Through experimentation Luckiesh and Moss discovered that as light was increased, the nervous muscular tension of the eye decreased. They recommend from ten to twenty foot candlepower for ordinary reading.

Seats should fit the child comfortably and enable him to have good posture at all times. Special attention should focused on the position of the arms as well as the legs. There should be ample room to walk about without bumping and irritating those about him. Maladjusted children become more easily irritated than the adjusted child.

A library corner with easy reading material which can be used for browsing is placed at a satisfactory distance from the reading work table so as to enable those receiving individual or group instruction to work without being disturbed.

The teacher tries at all times to be as quiet and poised as possible. Emotionally disturbed children are affected by changes in routine, by the appearance of visitors they do not know, by extreme changes in weather, and by strenuous play at recess or noon. They are irresponsible, losing pencils, misplacing work, and forgetting important duties. The teacher tries, therefore, to meet these situations in an understanding manner. All her work and assignments are carefully planned, so that each child will have his assignment stated as simply and understandably as possible.

The class is divided into small groups of from two to five in a group. If a child does not fit into any group, he receives individual instruction. This is especially true of "a newcomer." For several days he is instructed alone, so that a desirable teacher-pupil relationship can be formed. The teacher can more readily note both desirable and undesirable reading habits. She can explain the procedures which are new to him, and which should be followed when he returns to his own seat. Another reason for individual instruction is that some children become embarrassed and excited when working with groups of children. Their past experiences of group reading have been unhappy ones, leaving a wound which will take time to heal. Then there are those who work better with groups. They require fellowship with others who have the same reading difficulties.

It is important that every child begin to read at the level where he can achieve success. The very first lesson must be one in which he can receive much praise and encouragement. It is better to use a book which is too easy than one which is too difficult.

Every child is supplied with two readers. One of these readers belongs

to a basic reading set, where there is a controlled vocabulary. With this book the child receives either a lesson sheet or a work book. This is to be used as silent reading material at the child's own seat; while other groups are being helped at the table.

The second book is one which is read purely for fun. It is usually one grade lower in vocabulary difficulties than the work type book, so that the child can acquire real pleasure in his reading and at the same time be receiving the much needed review of the basic vocabulary.

Care is taken in selecting books for the eleven and twelve year old boy. He does not enjoy reading about the pleasures of six year old children. Therefore, science books and nature stories are used successfully with him.

In the teaching of reading stress is placed on silent comprehension, on word study and analysis, and on oral reading. Most of the comprehension reading is done silently at the child's own seat. Discussion of these comprehension problems is carried on with the group at the work table.

All of the comprehension assignments are found on the lesson sheet, or in the work book. They consist of (1) answering specific questions, (2) following definite directions, (3) matching parts of sentences, (4) using multiple choice, (5) answering true and false statements, (6) choosing probable outcomes, and (7) supplying missing words. This comprehension work is done with reading material which contains a minimum of word difficulties. Otherwise, too much time is spent on trying to recognize details in words, while the meaning of the sentence becomes lost.

A deficient reader lacks the power to recognize words. He needs to learn how to attack new words by the process of sounding. Before attempting any teaching of sounding, the child must have a basic sight vocabulary. Dolch's 220 words which occur in 50% to 75% of all reading material is taught according to his directions to those who need them. These "One Look Words" are used by the children in the form of a game. A child who knows the words at sight is used as a teacher. He very happily teaches the words to the one who is less fortunate than he.

A variety of vocabulary drills is used in the teaching of sounding. They are (1) finding words which begin the same, (2) finding little words in the big words, (3) forming compound words, (4) dividing compound words, (5) finding words which rhyme, (6) learning long sounds of vowels, (7) learning short sounds of vowels, (8) listing opposites, (9) finding words which mean the same, (10) placing words in alphabetical order, and (11) adding endings as ly, ed, ing, s, to basic words.

Care should be taken to emphasize the left to right progression in all reading.

Many children have acquired the slow method of "spelling out" words they do not recognize. These children are weaned away from this by practicing the various vocabulary drills which have been mentioned. Some are helped by using flash cards although one has to avoid the speed element which frustrates the slow reader.

Syllabication is taught as the need arises. This is done very gradually, at first using words with only two syllables.

Children who are deficient readers need constant repetition of the basic vocabulary. Much additional material on the same level is read before an attempt is made to use the next higher level in the basic set. When changing from one set to another a careful check should be made of the number

of words which are common to both sets, so that there will not be too great a change in vocabulary, resulting in a vocabulary load.

Oral reading is most important for the deficient reader. When a child is able to read well orally, he feels the joy of accomplishment which gives him a social status such as he has never been able to attain before. Children enjoy reading orally to such a degree, that if they have not had the opportunity to read to the teacher or group some time during the day they feel as if they have been sadly neglected.

Reading orally to the teacher is an excellent way for her to discover the difficulties of the child. All words not known are noted so that special help can be given in learning them later. The child writes these in his work book so that they can be learned and reviewed from time to time. These are the words which he learns to sound. All material for oral reading should be at the child's own reading level. The teacher should at no time grow impatient or discourage at the child's efforts.

The class as a whole participates in some science or nature unit during the semester. At one time it may be "The Solar System." At another time it may be "Airplanes" or "Silkworms." Easy reading material, pictures, displays, and other visual aids are obtained to make the study more interesting. The children read the simple stories and carry on class discussions. Stories in which the entire class participates by suggesting sentences are written, corrected, and re-written. These stories are printed on large charts for the class to read at will. Illustrations are made for each chart by the children.

RESULTS

One of the first questions asked by parents when a child enters the room is, "How long will it take before my child can read?" It is impossible to predict the length of time which it will take to bring a child's reading up to his mental ability. Some children improve so rapidly that at the end of a ten-week period they have been able to return to a regular classroom and achieve success. Others whose emotional blocking is great remain more than a year. Sending them back too soon may result in an emotional setback.

A record of each child's progress is kept throughout the semester. There is nothing that seems to spur a child on to greater effort than to know that he has improved, no matter how little that improvement may be. Parents, also are interested in the records of their children. They, too, are proud of any sign of improvement.

Following are a few cases cited to show how remedial reading can help the whole child:

A girl twelve years old came to the class in February testing B1 in oral reading. At the close of the semester she was reading fluently in a third grade reader and enjoying it. When told she would return again in the fall she remarked, "I am glad. Now I will have the opportunity of catching up with my friends." This girl had also shown a marked improvement in her attitude to the other children. At the beginning of the semester it was almost impossible for her to play peacefully with other girls her own age. During the last two months of the term not a single complaint had been made.

Harry's father reported a marked change in the behavior of his son at home. Before entering the adjustment class, he was on the verge of

truancy. He tried at various intervals to remain at home, or to accompany his mother down town. Now the boy is eager to attend school and is proud of the progress which he has made.

Mary, an extremely nervous child used to pick her face so that it was fairly covered with scars and open scratches. As her work improved so did her face, which before the close of the semester became practically clear.

A ten year old boy who attended a private school was invariably being sent home for what the mother claimed was "a nervous breakdown." He entered the room six weeks before the close of school and showed no signs of a nervous breakdown at any time. He was finding his success in reading a primer and was more than pleased when told that he had made a six month's progress.

Just before the close of school an eleven year old boy entered the class. His parents had moved from city to city, so that he had lost the continuity of beginning reading. In one month's time he had improved from third grade level reading to fourth grade level.

CONCLUSION

The teaching of reading to deficient readers involves much more than the teaching of the mechanics of reading. It consists of a careful study of the child's physical, mental, social, and emotional condition.

When the teacher has acquired knowledge of all the factors which are basic to the child's difficulties, she is then better able to use corrective procedures.

Reading should be done at a level where the child can experience success. His deficiencies are corrected through the use of both silent and oral reading, together with a sufficient amount of repetition and drill. A lavish amount of praise and encouragement is very essential in the bolstering of his morale.

Remedial reading is an attempt to remove the barrier which has caused disharmony between the non-reader and his world. When that barrier has been removed improvement is not only seen in the academic adjustment of the child, but also in his social and emotional behavior. He can then mingle happily with his own group and develop into a well adjusted American citizen.

Division V

Teaching Bi-Lingual Children

TO YOU . . . A TEACHER

From the tragedy of war
Came the challenge
That all people know one another.

You answered that challenge!

And with infinite patience
Began building,
Stone by stone,
Word by word,
The broad highway of language
That leads to an understanding
Of one another.

* * *

De la tragedia de la guerra
Surgió la necesidad
De que todo el mundo se conozca
El uno al otro.

Usted aceptó la responsabiledad.

Con una paciencia infinita
Empezó a construir
Piedrecita por piedrecita,
Palabra por palabra
El camino real del lenguaje
Que nos conduce al entendimiento
Del uno al otro.

—MABEL CLAIRE KEEFAUVER

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READING THE SIGNS OF THE TIMES

Floyd C. Covington, Executive Director, Los Angeles Urban League

He who can read and interpret the signs of the times in advance of and concurrent with change—the great writer of all events—may ever read to run! Yet all who read do not run.

> "The Pharisees also with the Sadducees came, and tempting desired him that he would shew them a sign from heaven . . .
>
> He answered and said unto them, 'When it is evening, ye say, "It will be fair weather: for the sky is red."
>
> And in the morning, "It will be foul weather today: for the sky is red and lowring . . . " ye can discern the face of the sky; but can ye not discern the signs of the times.' "
>
> (Matthew 16: 1-3)

In the signs of the times in which we now live the unprecedented movement of peoples writes the prophetic message yet to be read from the pages of destiny.

> "Tremendous mobility of population is not a new social phenomenon in California. For nearly a century the Pacific Coast has been the ultimate goal. In this hundred-year saga current world conditions have written a new chapter. Rapid industrial development has brought people from all parts of the country. A new chorus of voices representing every region is heard in the school, in the factory, and in the marketplace. Cadences representative of the Old South, New England, and the Middle West are heard in the accelerated rhythm of life in California."[1]

Pearl Buck has aptly challenged us with her prophetic statement: "The Pacific Coast will become the gateway or the blockade to the Peace of the Orient." Just as truly is California destined to become the crucible out of which is to come the balancing peace of the United States. The mores and customs of the areas of disadvantage of the Middle West and "picturesque" Old South are yet to adapt themselves to the colorful and friendly ways of our Spanish tradition. The great trek of Americans across state lines has shifted the melting pot center from the East to the West Coast. The Statue of Liberty has now taken on the mein of the God Janus—double headed. There will be many who will seek her great light from the opposite shores of the Atlantic. However, her great light must now transcend the Pacific, guaranteeing that native Americans shall find a refuge from the great blight of ignorance and misunderstanding that still plague us from within our own borders. The signs of the times predict that the "three R's"—readin', 'ritin', and 'rithmetic—must be greatly accelerated and amended to overcome and subdue the three horrible "F" gremlins, fear, frustration, and friction. It is to escape the three "F's" that our hordes of immigrants have swept in upon us.

> "Many have arrived whose travel accommodations have been below the 'plush seat.' Some have come in Jeeps and Jaloppies

which they acquired by converting their 'forty acres and a mule' into cash before turning away from the 'land behind the sun'. No matter what the method—rubber, rod, or rail—they have definitely decided to permanently leave 'old man river' and take their chances, whatever those may be, in this California of newly found freedom."[2]

More than 500,000 newcomers have surged across the state line of California since Pearl Harbor. A recent study by the Los Angeles Chamber of Commerce selecting some 75,000 or more of these in-migrants at work in our war industries indicates that more than 83 per cent have decided to cast their lot and remain permanently with us. Of this half million, more than one hundred thousand of these newly arrived Americans are of African ancestry,—Negroes, if you will still choose to retain a word now dropping into obsolescence. A more exact term (if there still needs to be a reason for differentiating Americans) would be African-American. Our army of occupation and invasion has already learned that it dare not refer to the African as "Negro" in West and North Africa, for fear of complicating our international position. Our soldiers are instructed and warned not to mistreat the Negro soldier in the United States uniform in Africa unless we wish to aid Hitler's cause. Native Africans assemble, service, and repair our big Douglas bombers in Africa with no more language equipment than a specific color identifying each box of our spare parts shipped from the main Douglas plant in Santa Monica. Africans read the signs of the times and recognize progress brought to them through this accelerated art of "primary reading", the reading of things, previously unfamiliar to their locale. And, reading of things can be reciprocal. The global war and a gigantic Douglas airplant plant outside an African jungle have taught the African how to read things of modern aeronautics. In turn the intense sun of African skies has darkened the skins of our once-whiter engineers sent from the main plant in California. With a new and deeper sense of art appreciation these modern builders of the mammoth sky birds of today and tomorrow send back to America primitive African sculpture and replicas of black gods hand-carved from ebony. The old world now having shrunk to a mere sixty hours by air from New York City to the colorful capitals of India, China, Africa, and Russia, it becomes necessary to be able to read things and printed word symbols of the peoples of these great countries, now our next door neighbors.

Who knows but what the signs of the times augur the possibility that the slave ships may again return bringing in their black gold? This time they will not be ploughing through uncharted seas or fighting the dangers of the briny deep; but smuggling their human catch in the tail-sections of gigantic super-fortresses shooting through star-bedecked skies with meteoric speed. With the fantastic touch of Buck Rogers and the Twenty-fifth Century bringing us faster and faster sky transportation, swifter and swifter means of communication, our tomorrows are already todays. If that be the prophetic picture of the future, how necessary it is that we take cognizance of the movement of peoples who have already begun to change the speaking, thinking, and living habits of our highly advertised state. The unusualness of our climate, and the gigantic, colossal, and stupendous Hollywood atmosphere are not the loadstones attracting our continually

arriving populace. Their quest is motivated by their insatiable desire for greater opportunities, better advantages, and freedom.

> "Like the rest of the great horde of newcomers arriving in California to make up the yet incomplete labor supply for our war industries, the Negro has, for almost the first time in his experience, found work plentiful with undreamed of wages. He has come, he has seen, he has found work, but he has not conquered. He is ill housed, ill adjusted, and ill educated . . . seeking freedom.
>
> "The bulk of our migrants come from the Southwest. The Negro is no exception. He is in California, but he looks to Texas, Louisiana, Arkansas, Mississippi, Oklahoma, and Missouri. He finds himself in a city with many advantages. He is not seeking gold, fame, or the highly publicized features of our 'sunny climate'. He seeks only freedom, a freedom from the many repressions and limitations of a cruel and unsympathetic rural region where the four 'fears' made up his Southern Charter. These four fears: fear of want, fear of ignorance, fear of death, and fear of fear, have left marks on his attitudes and spirit. He comes now searching earnestly for a refuge, a promised land which harbors no giants of despair. These migrants are not too conversant with the 'Four Freedoms' for which we fight abroad. They fight desperately now to gain a single 'freedom', the sheer chance to achieve the freedom of just being 'free'."[3]

The greatest printed word symbol in the signs of our times is freedom! This great crusade expresses itself through the so-called zoot suit—the cry for freedom of expression accompanied by the great desire and need for attention. And where restrictions, segregation, persecution, and repression flourish, the American of African ancestry develops the Spiritual, the Blues, Boogie Woogie, and Jive for release and escape. In the days concurrent with slavery, when the Negro slave sang plaintively, "Swing Low Sweet Chariot . . Comin' for to Carry Me Home" . . . and "Git on Board, Little Children, there's room for many a'more" . . . he was not giving expression to a religious urge but signaling and informing members of the slave colony where to go and how to find those who were aiding him to escape to freedom via the underground railroad. The Spirituals, now acceptable American music, were originally secret codes for media of escape or protest songs against slavery. "Massa's in the cold cold ground . . ." was not altogether a sorrow song of humble regret that the Master in "the Big House" had died, but a wish-fancy in secret on the part of the more militant slaves that a few more of the slave over-lords would die or be killed by insurrection.

"Feelin' tomorrow lak I feel today . ." in the St. Louis Blues was the nostalgic cry from the tragedies and lonesomeness of city slum life by the once-rural Negro trying to hide his sense of homesickness and lack of affection in the bleak, black overcrowded tenements. The faster tempo of city life, now more definitely absorbed, but accelerated by a rapid machine age, breaks out in the pant and shake of the Boogie Woogie, and through this physio-psychological release the Negro urban dweller throws off the deadening monotony of the long repetitious hours on the assembly line. Accompanied by its predecessor, the jitterbug, the necessity of an expressive language finds its "out" in the rug cutting, wisecracking, banter of the barber shop, and hot stuffy dance hall jive.

> "From the extreme repression to a newly found chance for expression will be the attitude with which our schools will have to deal. Teachers will find it necessary while endeavoring to teach the English language to know and understand the 'jive slanguage' and the reasons for it. Many of the children of our Negro newcomers have little or no formal education. They are over-age and under-educated."[4]

When individuals are robbed of a normal status they will compensate for it in some way. While the immigrant, white and negro, may have been denied formal book "larnin' ", it does not say that they will not develop language and reading concepts that are understood and transmitted within the group. How interesting it is to see how the almost illiterate, untutored Negro—now in uniform—has changed our military commands to jive jargon. White officers in control of Negro troops have had to go to school, so to speak, in order to understand the revamping of their standard commands. Here is a specific sample.

Four commands are given: "Company, left oblique, march!—Company, attention! Count off!—Company, to the rear, march!—Company, fall out!" But here is the way the Negro non-coms repeat the commands: "Left flank walking!—Cadence talking!—To the rear, git it!—Company quit it!" It was quite some time before our white officers discovered that when they gave the command, "Attention!" and heard it repeated, "Eyes at ya!", that it was not a case of mutiny within the ranks, but the Negro's naive way of reducing the long and tiresome list of printed word symbols to a more simple form which the untutored could grasp readily and easily. The white officer barks his commands with grating words of authority. The Negro officer and non-com translate them into musical rhythmic terseness. One man speaks word symbols, the other sings graphic emotional phrases! Thus, a new language is born!

Suppose that you, my listeners, of the Reading Conference try your hand at translating:

> "Say, Gates, have you heard about those fine togs they've got at Golden State Department Store for that Easter Parade . . . Man they're fine and mellow . . . Fall in line Jack, shake yours like I'm shaking mine. I dig this fly front with the reat pleats and stuff cuffs at Golden State, and I'll be on like a light for the Easter Parade, and fly chicks you too can be in on the line. Get hep with the short skirts and the suits which are in the solid class." (Adv. appearing in the *Los Angeles Tribune*, April 19, 1943).

This collection of expressive word symbols is quoted in part from an actual advertisement of a small department store near the so-called Negro district.

Perhaps, a better example, with the literal translation, is contained in this letter of a Negro youth to one of his friends relating the fact that he is about to be drafted.

> "Hey Hoss: Old man, I've just doubled back from a hard gumbeat with the three tough studs at the snatch-board—and Hoss, them kids are fixin' to saddle every living cat with one of them boys, but they never tumbled. Looks like I've got a hard hand to hit with a ten comin' up, which adds up to a natchal bustout. I figgered if I copped a plea about my short peepers and

> poor pedals them kids would raise up and let me take fresh try for it. Let me hip you that them stud snatchers have stopped up their sound catchers and pick up on no beef tips. They backcap to me that they ain't comin' on no mizz riff and I'll be draped in brown by the 16th of the next thirty. That's a bringer cause I figgered to be stached in a fine new front for that frolic that jumps off April 25. Looks like I've got a hard way to go, don't it old man."

Did you succeed in writing down your pure literal translation? Well, here is the essence of what it means. "Homeboy has just returned from a visit to his draft board in which he found that they were planning to put a gun on the shoulder of ever able-bodied man including him. He tried to con (confidence) the board but found that he had no chance. (The bustout refers to black jack). He tried to get deferred on the grounds of bad eyes and bad feet. Neither complaint stood up. He feels that this is especially unfortunate as he was planning to wear his new suit in the Easter parade." (From jive column, "Home Boy Says," *People's Voice*, April 3, 1943.)

As an indication that this jive talk has influenced its counterpart of all American youth, here is a quotation from the Pepsi-Cola advertisement accompanying the picture of two white college girls. Incidentally the advertisement appeared in the *Scholastic Magazine* of October 26, 1942. The slanguage and translation follow: "Do you dig it? I'm blowing this hen-pen on the fly. The he-pal's hooked a tintype for a take-off and we're rendering a pepsi-cola duet on the curb." Here is what the college Miss conveyed to her room-mate in word symbol: "The filly on the right says she's casting off in a flurry because her date has borrowed a bus, and they're heading out to the drive-in for two Pepsi-Colas."

And there you have a case study of the influencer and influenced. The signs of the times point to the necessity of applying the balsam of the three "S's" to the three "R's" in our reading techniques. An humble Negro educator, Booker T. Washington, read the signs of his time and left for us a prophetic group of impressive word symbols: "You can't keep a man in a ditch unless you stay there with him." Thus, the advantages and restrictions of our backward communities have been transplanted into our more favorable regions. What the results will be depend upon the sympathies, understanding, and techniques of our greatly strained educational system. Our analysis of these conditions must enable us to differentiate between effects of previous bad environments and innate racial characteristics. In our effort to teach the standard three "R's" we must apply the three "S's": sympathy, sense of humor, and sincerity."[5] In that case we will relate cause to effect. We will then be able not only to "discern the face of the sky" but to read the signs of the times!

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INTRODUCING THE TEACHING OF SPANISH IN THE ELEMENTARY SCHOOLS OF LOS ANGELES

Mrs. Ruth Ginsburg, Member of Curriculum Committee on Spanish in Elementary Schools, L. A. City Schools

The idea of introducing the teaching of Spanish in the elementary schools of our city has been under consideration for a number of years. On June 14, 1943, Vierling Kersey, Superintendent of Schools, announced before the closing meeting of school principals, supervisors, and administrators, that the teaching of Spanish on the elementary levels would become a reality in our Los Angeles schools in the new year 1943-44. This was not to be considered another wartime emergency measure, but rather to be undertaken as a permanent part of our regular school program, developed over a long period of time.

The political, social, economic, and cultural reasons which prompted such a decision will not be discussed at this time. The objectives of our program, however, must here be summarized:

A. The general objective: to develop a better understanding and appreciation of our Spanish-speaking Americans, their life, their cultural traditions, and their philosophy.

B. The specific objectives: to speak and understand the language of our Spanish-speaking Americans. This would imply the mastery of a simple, basic vocabulary which would include greetings, directions, conversation pertinent to daily activities of students, and the accuracy of pronunciation and enunciation of Spanish words.

Work on the Spanish program was actually begun during a two-week Mexican workshop sponsored by the Los Angeles City and County School Districts during the summer of 1943. Members of the Elementary Curriculum Section, in cooperation with a committee of supervisors, principals, and teachers representing all grade levels, began the development of the instructional program of Spanish and outlined plans for its introduction in the elementary schools in the fall semester.

It was hoped that all teachers, from the kindergarten through the sixth grade, would eventually be prepared to teach the simple, basic vocabulary and phrases specified for each grade. This was to be, however, a long term project, gradually developed. No teacher was expected to undertake the work before achieving a definite sense of security. Thus, a period of inservice training was projected.

In order to give all teachers and administrators specific information concerning general purposes, objectives, methods and materials of instruction, a symposium was prepared. The panel was composed of a chairman; a principal, who set forth the reasons for our program; an elementary teacher, who discussed methods of presenting a Spanish lesson on the elementary level; a junior high school teacher, who demonstrated the conversational approach; a senior high school teacher, who discussed the integration of the conversational approach at all levels of instruction; a teacher training

supervisor, who pointed out the role of the training school in our Spanish program; a supervisor from the Audio-visual section, who demonstrated audio-visual aids in the teaching of Spanish, and finally, the supervisors from the music and art sections, who pointed out the materials which their respective departments were ready to contribute toward the more complete development of our objectives. The panel was presented at three different meetings, one in each of the three school districts, before the administrators and foreign language teachers of the city. The panel was then repeated before all of the elementary teachers (4,500) again in three sections. Thus, every member of our school personnel had the opportunity of getting general and specific information at first hand.

Following our panel presentations, a committee of elementary teachers, representing all grade levels, prepared the instructional guide, *Introducing the Teaching of Spanish in the Elementary Schools of Los Angeles.* The Spanish vocabulary, as it was developed, correlated very closely with the interests and activities of students at the various grade levels. The Guide includes the following:

a. Purposes of the program.
b. Objectives of the program.
c. Plans for administration.
d. Sequence of learning of each grade level.
e. Aids to pronunciation.
f. Aids to usage (a few basic grammatical facts).
g. Enrichment material (correlating with social studies).
h. Music.
i. Suggested methods and techniques of instruction.
j. Planned materials of instruction, audio-visual aids.
k. Teacher bibliography.

Of this Instructional Guide 4,500 copies were distributed to the entire elementary school personnel by the Elementary Curriculum section.

A survey was then made of the Spanish-speaking abilities of our teachers. The questionnaire was sent to all elementary teachers and to the Spanish teachers of the secondary schools. All those who were conversant in the Spanish language were asked to volunteer leadership services in their respective schools of contributing schools.

A minimum of five preliminary meetings was deemed necessary to assist elementary teachers in initiating the program. The response to this survey was most gratifying. Each of the 301 elementary schools was assigned a sponsor who had volunteered to help the elementary teachers of the school. These volunteers included foreign language teachers of the secondary schools, elementary teachers with Spanish-speaking abilities, and adult education teachers. Meetings were held after school hours, and in many instances continued throughout the semester. All teachers were learning to pronounce Spanish, to understand and to use in simple, basic phrases and sentences.

Audio-visual materials are now being developed to further assist teachers with the instructional program. These are of two types; first, the Spanish study prints, which illustrate the words and carry the Spanish vocabulary on the back of each print; and second, phonograph records, which develop the specific vocabulary for each grade level in order to insure correct pronunciation. These audio-visual aids are to be distributed to

each elementary school this fall (1944) and are to become part of the permanent collection of the school.

Institute sessions are being planned for the coming year, which will relate directly to our program and to Latin American cultures.

It must be reiterated that the teaching of Spanish is not compulsory in every instance at this early period. Teachers must feel a sense of security before undertaking the work. The enthusiastic response of pupils, teachers and parents thus far, however, has exceeded our greatest expectations.

The Spanish program has made a fine contribution toward a closer articulation and coordination in all levels of schools through cooperative planning, presentation of school programs in which secondary and contributing elementary schools participated, and open-house activities. In a number of communities, pupils, teachers and parents have engaged in Spanish-learning activities. The tremendous increase in individual classes in Spanish may be said to reflect, in some measure, the interest aroused by the Spanish program. In fact, few instructional programs have met with greater public approval and appreciation.

Finally, it must be repeated that our program is to be viewed as a consistently sustained, long term, permanent undertaking, which, it is to be hoped, will eventually result in creating a bi-lingual community.

THE TEACHING OF SPANISH IN THE JUNIOR HIGH SCHOOL

Mabel Claire Keefauver, Teacher of Spanish, Hollywood Junior High School

Van Loon said that he was searching for a place where a civilized human being could spend his days with the least possible minimum of irritation and the greatest possible maximum of inner satisfaction.

As a teacher, I am searching for a method of teaching Spanish which will result in the least possible minimum of irritation and the greatest possible maximum of inner satisfaction—not for myself alone, for that is impossible, but for my students and all with whom I come into contact. Perhaps as Van Loon says: " . . . the only treasures which are truly ours are those we lay up in the hearts of our friends."

But as a consolation, while we are searching for and accumulating these inner satisfactions, it is comforting to realize that it is the irritations which many times inspire us to keep moving, to improve ourselves, to progress.

I believe that a genuine feeling of inner satisfaction with regard to our study of Spanish makes a fine introduction to the people who speak the

language. That is the only reason for teaching a language—to know the people themselves!

In the past, that feeling of satisfaction has been hard to achieve because the entire language was crowded into the traditional two years to meet a college requirement—instead of a life-time endeavor to understand a people! The personality of those who speak the language was overlooked in the necessity quickly to memorize and recite the rules of grammar in order to pass the examinations.

Now that Spanish is beginning to be taught from the kindergarten through the university, with more and more opportunities to use the language in all of its many and varied aspects, that old condition that led to nervous exhaustion on the part of the teacher and a sense of frustration on the part of the pupil is happily disappearing.

Now the teaching and learning of the language follows the natural pattern of growth: learning a little each day, as we grow in other ways too, so that the knowledge gradually accumulates, and when the student has grown old enough to make practical use of the language, it has become a natural means of expression. "Buenos días" comes to mind as easily as "Good morning."

We might divide our discussion into four parts: the language, the pupil, the teacher, and the integration of the preceding three elements into successful teaching and learning.

You will notice that I like to repeat the two words, teaching and learning. There is a natural tendency on the part of the students—all students, old and young—to place all of the responsibility on the teacher. As the lilies of the field, we would enjoy learning by osmosis—just absorbing Spanish from the atmosphere. I am reminded of the ranchero in Argentina who had sent his son into the city to a fine school. A neighbor asked him how his son was progressing. The father wisely answered that the son had been studying but had not yet begun to learn.

I think that is one of the hardest problems of a teacher—to inspire a student, a citizen in a democracy, to do his own thinking, and to try to match his own efforts with those of his teacher. Teaching plus learning equals success.

Older people realize the value of a language, but junior high school pupils have probably not stopped to think about it. Their lives are crowded with the natural activities of "growing up." They are very much interested in themselves. But they have a wholesome curiosity, and vivid imaginations, and once started, they really like to study about other lands and peoples. They have no prejudices, unless they have acquired some from their parents, older friends, and teachers. In this regard, I always like to remember the words of kindly and wise Dom Pedro, Emperor of Brazil, but so democratic that when he was visiting us in 1876, during an election year, he was suggested as a fine candidate for President! "If I were not an Emperor, I should like to be a school teacher. I know of no calling nobler than that of directing young minds and training the men of the future." Education is "guided growth," and our responsibility is tremendous in guiding it in the right directions.

All of these thoughts about a language should be constantly discussed with the pupils. It is surprising how quickly they catch on, and how they like to discuss these things, or listen to the discussion. They haven't lived

long enough to read all of the books the teachers have read, or travel where she has traveled, or know the people she has known, but children love to listen to stories, interestingly told. Undoubtedly, that starts many of them thinking about what they want to do or be when they grow up.

I think that it is a mistake to stress too much that they must study the language to travel someday in those countries, or to use it in a business way. Many will never travel, and many may find English beautifully spoken wherever they do go. Not all will enter the business world.

Now I shall probably never travel to the little Indian village high up in the Peruvian Andes, which is the scene of the fine novel, "El Mundo es Ancho y Ajeno." And yet that old Indian mayor is a favorite of mine. I like to know that he is living down there and that he thinks those thoughts which I admire so much. It makes me confident of a better world. Notice how universal this thought is. The parents are building a school house so that their children may have the opportunities they themselves have missed. The mayor—they call him taita—comes by and remarks that it is going to be a fine "escuelita." No, no! answer the parents proudly—not escuelita, a little school—escuelaza, a big, fine school!

Whenever taita had a problem to solve, he first climbed to the top of his favorite mountain, and sat there for awhile in deepest meditation, and filled his eyes with horizons! Don't we all like to do that? Whenever I stop struggling, and gaze off into the distance, to rest a bit and to regain my balance, I always think of that old Indian so far away in the Andes. That habit we have in common builds a bridge over time and space, and he seems like an old friend living next door. The youngsters like to have that little village pointed out on the map, and one can see by the expressions on their faces that they too enjoy knowing that far away those people think the same thoughts that we do.

And so to me, that is the greatest value of a language—to know the thoughts of other people.

This war has taught us one thing—about languages. It is important for all of us, the world over, to know what the other fellow is thinking and saying, teaching and learning.

Of course, those who instinctively follow the lines of least resistance, will demand an interpreter, or will wait until all of the speeches and books have been translated, or until all of the Spanish speaking Americans have learned English well enough to write their thoughts in English. But I really don't think that we should worry too much about those people. If those of us who know another language enjoy ourselves, and let others see that enjoyment, many will be constructively envious, and follow our example. Some never will, but they will redeem themselves by accomplishing something in other fields, of which we may know nothing. It takes all kinds of people and activities to make up the world, and maybe even parasites serve a good purpose. Mistletoe does, and so do orchids which can live on air. There are times at the end of a day, when weary and covered with chalk-dust I have wished I were an orchid, idle and glamorous!

And now, a few words about the students. Psychologists tell us that one of the strongest drives in our nature is the desire to be important, to be recognized. A child who knows another language has a new importance, especially if he is given an appropriate opportunity to demonstrate that power. Now here is an instance where those who do not want to learn

another language serve a purpose. Something is said in a foreign tongue. They don't know what it is. Their natural curiosity makes them ask, "What did you say?" And then what a satisfied expression comes over the face of the speaker when he is able to explain to them. We all need and like to have an audience. And so, in the teaching and learning of languages, it is very important for the teacher to give the pupils every opportunity to use their knowledge, however limited it may be. Class work naturally just reaches the members of the class, but an assembly program, one a semester, at the end of the semester, provides a wonderful incentive for the pupil to study and really to get results, especially if Spanish speaking guests are to be present. It is as natural as breathing to want to acquire a skill that is going to be recognized and praised.

Now that brings up the extremely important problem of the pupil who does not acquire a skill that can be praised. I am firmly convinced that language is an artistic accomplishment. One must have language ability just the same as one must have music or artistic ability to be really successful. But those of us who are not concert pianists can still appreciate and enjoy the music when some one else plays it, and profit by it in every way. And we can learn a tune by picking it out with one finger, using the biblical system of "Seek and ye shall find." It is the same with foreign languages. Without the opportunity of living in the foreign land in childhood and growing up with the language and thereby learning it as a mother tongue, or along with the mother tongue, there are many pupils in our schools who never seem to be able to master the language well enough to speak it correctly and fluently. And yet they may acquire, by the laws of compensation, a sincere appreciation of the people and the customs just by their association with the language and those who do speak it well. They can become bi-lingual in thought if not in deed. We can remove the sense of failure—a poor introduction to our neighbors—by substituting an appreciation of the language and people for the primary goal of being able to use the language.

One other student characteristic. They seem to prefer the panoramic view to that of the minute detail. They like to get an idea of the language, but oh how they wiggle and squirm when they are pinned down to o's and a's, and verb endings and accents! Perhaps they are like the Irish maid in the book, "Young Man from Caracas." She lived in Venezuela, but the only Spanish verb ending she ever used was the present participle ending, "ando." Yesterday, I going to the store. Today I going to the store. And tomorrow, I still going to the store.

And now a few words about the teacher. She must be patience personified. Patience, and good will, and vitality. I have often walked down the hall, during a free period, and gazed wistfully through the open door of other classrooms, where perhaps a mathematics class was working. I have marvelled at the silence, but most at the physical quietness of those little bodies. A student in a language class, brimming over with bottled up ideas and enthusiasms which he must learn to express, jumps about like a Mexican jumping bean, or sinks back into a frustrated silence that sooner or later finds other outlets, not always legal! Little timid, meek, and mild George one day carried clods of earth upstairs to his Spanish class, and pelted innocent passersby down below until the teacher saw him, and guided his activities into more productive channels.

And that brings up the question of the too-large class, in which each child could receive one minute of individual attention a day. But this situation in war days must be patiently accepted, and in post-war days definitely improved!

The language teacher, as the voice teacher, must sing all day long. One cannot learn to speak by being silent. But there must be moments of repose in which we read and write, and store up skills and knowledge with which to speak and understand what is being spoken.

And now that we have just barely mentioned the language, the pupil, and the teacher—the three ingredients—let's see what kind of a cake we can bake!

Pronunciation comes first. Start right in speaking and reading the language orally, and let the students follow the leader. Throw them into the pool, but do not expect them to swim alone at first. Be their water-wings. Otherwise, some might drown, others would become frightened, and all of the joy of living and learning would disappear for some. There might be a few rugged individualists who will jump in and swim alone, but they are the exceptions to the rule. Pronounce a word and then ask, "How did we pronounce it?" Let them recognize the sound themselves. Repeat often enough until they can remember it. At the end of the semester, you will notice that they like to bring the loose ends together, and write down in their notebooks all that they have discovered and learned.

From the very beginning, call their attention to Spanish word order, and to modismos. This is not only fundamental scholastic training, but positive personality development. It is good to know that some other way exists besides our own, and that the other fellow's way is as good as ours, and must be recognized and respected. President Roosevelt dedicated this nation to the policy of the good neighbor: ". . . the good neighbor who resolutely respects himself, and because he does so, respects the rights of others." It is correct for us to say, "I am ten years old." And it is equally correct for the Spanish speaking pupil to say, "I have ten years." Until our students get used to new ways of expressing the same thought, some little fussbudgets will grow up into big fussbudgets who cause a tremendous amount of friction, if not actual damage, by always wanting the rest of the world to live in their way, which is the only way. Some of these will invariably blurt out, "Aw gee, that's silly! Why do they say it that way?" And when you answer, "Because it is their way of saying it," they bounce right back with, "Why don't they say it like we do?" Which brings you right back where you started! And then some future leader firmly closes the debate by announcing, "Maybe they think we should say everything their way!" The remote possibility of so much change and effort silences the multitude.

But seriously speaking, the ability to understand and express thoughts in different ways leads to tolerance and respect and interest in others. We become less selfish, and much richer because we acquire a new personality with each language we learn.

Through reading, because reading "stays put" whereas conversation comes and goes, let them discover for themselves the two word orders. Let them write out translations, not for the sake of doing something while the teacher rests and finishes some other work that has accumulated, but for the sake of learning by comparison the two ways of expressing the thought.

"Juan no tiene el lápiz rojo." John no has the pencil red. John does not have the red pencil. If they have not been trained since the beginning to observe and follow Spanish word order, when they try to speak, they will naturally follow the only word order they know and say, "Juan tiene no el rojo lápiz," after having pestered you to death to know how to say "does."

This written work also gives them a firm foundation upon which to stand when they begin to speak. It gives them confidence. I think that it is a big mistake to allow them to stand up and say most anything just in order to get them to talk. They are not happy doing that. They are extremely conscious of the fact that they are lost and just wandering around. They like something concrete to hold on to.

I think that everything that is being done should be corrected as it is being done. Oral work should be corrected as it is being spoken even though that slows things down, and sometimes seems discouraging. The constant correcting makes both students and teachers take things slowly and gradually, and helps them to keep all work simplified and clearcut. Accuracy must come before speed. Fluency is based on thoroughly mastered and assimilated skills. Sometimes, many times, we become impatient, and are tempted to swim out beyond our depth. That is dangerous.

This correcting as one goes along, especially in a written exercise, strengthens another personality trait—honesty! It gives the pupil practice in playing fair, with himself, his classmates, and his teacher. In the Army Air Corps play, "Winged Victory," there is a powerfully written scene in which the young cadet is asked to record his own errors. An electrical device will also record them. The man who can detect his own error, record it, correct it, is the man who wins—for himself, and his country. I read the scene to the class, and I was surprised at their reaction. It appealed to them very much. And there is no serious trouble with cheating, except in a few extreme cases.

I think that another good way to teach an older child to speak is to teach him to read, because in reading he finds a concrete and a permanent example to follow. To learn to speak by speaking means that the student must have some one speaking to him. But the teacher, or some other person cannot always be there during the study hours to practice with the student. Reading is a fine silent partner for speaking. And many times, after talking, talking, talking, the students like to settle down to quiet reading, noting new word orders, new words, or just reading for the thought alone.

Another problem which must be consistently tackled from the very beginning is that of vocabulary. Not a single day should go by but that the student learns a new word. To keep them at this steadily, it is well to have them hand in to row monitors four days of the week little papers on which twenty new and not-yet-mastered words have been written, in a very special way. They are on their word of honor to follow the rules, and one can usually tell if they have or not by judging the results of their work in class. If they can pronounce and spell the words and know what they mean, one can take it for granted that a certain amount of work was correctly done. Fold the paper into four columns. In the first column, copy down the twenty words to be studied. Write them in English. Study their Spanish equivalents orally. Then put away the textbook. From memory, try to write down the Spanish words in the second column. Open the book again and correct them carefully. Then put the book away for

good. Fold the first column under. In the third column, write the English meanings for the twenty Spanish words. Open up the paper, and compare and correct by the first column. Then fold the first and second columns under, and try to write correctly the Spanish words in the last column. Usually after having written the words four times, testing the memory three times, and correcting all mistakes each time, one knows the words well enough to recognize them or use them. Perfect retention depends upon use—and repetition.

And now, one might ask, "But what about grammar, that old bugbear!" It must be so perfectly integrated with the speaking, reading, writing that it just naturally grows up with the language. It can never be isolated from the language, no more than the skeleton can from the living body. When some rule is needed, learn it as it is needed; when some mistake is made, learn the correct form; when some question is asked, answer it. And every so often, bring order out of confusion by collecting and arranging the rules for reference and clearness sake. Use grammar rules as a road map, as sign posts to lead one in the right direction.

Ohoooo dear me! The more one delves into such a big subject, the more one realizes how little has been said, and how much more there is to be said. Teaching and learning is a life-long task. All we can do is to start down that broad highway, enjoying the scenery along the way, each one pointing out that which appeals most to him, having wonderful discussions as we trudge along, and always finding that every time we reach one mountain top and think that now we have come to the end of the road, we see to our surprise and delight that the road winds on and on, through valleys and over plains and up other mountain sides. But we like that—we know we do! As Victor Hugo said: "Life is not a blind alley, it is a thoroughfare. It closes with the twilight. It opens with the dawn!"

LANGUAGE—ONE MEANS OF IMPROVING MEXICAN-AMERICAN RELATIONS

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Much of our daily thinking with regard to language is negative. Language, any living language, when rightly considered, is a positive, a dynamic force. In a world where negative thinking is manifesting itself in so many forms of violence and destruction perhaps it is to be expected that our thoughts regarding language will lack a positive trend. The following scraps of conversation, overheard recently, are samples of negative

thinking about Spanish and English, the two languages heard most commonly in the Southwest:

Eighth Grade Girl: "I get mad when the Mexicans talk Spanish before me. If I knew how to speak Spanish maybe I wouldn't feel so uncomfortable when they are around."

Sixth Grade Boy: "Sure, I started the fight, but I hit him because he was calling me names. I know he was calling me names because if he hadn't been he wouldn't have been talking in Spanish. He would have said it right out in English."

Eighth Grade Mexican Boy: "Yes, I punched him in the nose; but he called me a dirty greaser, and I won't take that from anybody."

Seventh Grade Mexican Girl: "Oh my, if they start punishing us for speaking Spanish at school, I'll be getting it all the time, everywhere. My parents punish me whenever I say a word in English."

Tenth Grade Mexican Girl: "I know why I got a failing grade in English. It's because I won't take part in oral work. But I just can't make myself speak up in class because I'm so ashamed of my accent. You see I was in a segregated school for nine years."

Boss of a Picking Crew: "If Mexicans wanta live here make 'em learn to talk English."

Woman: "It makes me *boil* when they jabber in Spanish on the bus. They should have a little consideration for our feelings."

Teacher: "The Mexican children have such a language handicap they hold the other children back. They should be segregated till they can speak English."

A Superintendent of Schools: "Until the Mexican children learn to speak English we have no alternative but to segregate them."

Lecturer: "Linguistic differences are such a perpetual source of misunderstanding that hope for peace any time in the near future seems problematical."

The last statement is true, certainly. But is it true through necessity or merely through lack of a positive program? It seems necessary that we have, ultimately, a universal language that will be taught in every country in the world. Until such a language has been chosen or has been formulated we must try to understand one another by means of those languages in common use. Americans, as well as all English-speaking peoples, have assumed too often that the universal language should be English. "Make 'em learn English" is typical of our attitude. Whether or not a future world language is to be English or a combination of words from many languages, we have, as yet, no reason for putting all the responsibility for learning a second language upon the people whose mother tongue is not English. Since language is a means of communication between people, it is logical that each large area of our country should choose as a second language, that particular one which is spoken by the greatest number of people in the area. In the Southwest that language can be no other than Spanish.

It is in the Southwest that language is most often referred to as a barrier and a handicap. Even educators, the people best qualified to take a positive point of view, have justified segregation of Spanish-speaking pupils and other forms of discrimination because of the so-called language barrier between Mexican and American people. It is not strange that the

public have fallen into the habit of regarding Mexicans and the language they speak as liabilities to the community.

Obviously, if the prevailing attitudes toward our Mexican neighbors are to be changed through education, the educators must learn to think in positive terms about the peoples to the south of us and about their culture, including the Spanish language. Language should be a bridg , not a barrier to understanding. It is lack of language that raises barriers. The teacher's lack of facility in the use of the Spanish language is a handicap in understanding the child of Mexican origin who enters school knowing little or no English. The child's lack of facility in the use of English is likewise a handicap. Let it be remembered, however, that the handicap is mutual and that in both cases it can be overcome. If the teacher knows Spanish, or even if she is only trying to learn it, she has thereby already established one bond of friendship between herself and the Spanish-speaking child. Fortunately teachers in the Southwest are beginning to appreciate the value of bilingualism, and are therefore thinking more in terms of language opportunities than of language handicaps. As a result of this dynamic way of thinking Mexican children are coming to be regarded as assets in the classroom.

Two little boys, cousins who are in the same grade, attend schools in Los Angeles where Spanish was introduced last year as part of the elementary curriculum. One day one was overheard saying to the other, "Sure, you know more Spanish words than I do, but you ought to. You have Mexican kids in your school and we don't. I'll bet that if we had some Mexicans I'd know as much as you do."

Of course it is not claimed that language alone—either Spanish or English or both—will solve all the problems arising from conflicts between the two cultures. If the stream of misunderstanding between Mexicans and Americans is to be bridged effectively we shall need to utilize every constructive point of contact.

We have already made fairly satisfactory contacts through the exchanging of ideas on foods, clothing, architecture, art, and music. If all evidences of the influence of Spanish and Mexican culture were removed from California how colorless it would be! In these areas we have seen the opportunities; and our cooks, clothing manufacturers, architects, artists, and musicians have made the most of them.

In the area of language, which is a much more vital and intimate phase of Mexican culture, we have been less positive and therefore less creative in our thinking. It is true that we use many Spanish place names, usually mispronounced, especially by newcomers, and seldom meaningful to any except the few who understand Spanish. We have neglected the opportunity offered by our large Mexican population from whom we could learn Spanish and to whom we could talk, once having learned it. It is this failure to use the best cultural gifts of the Mexican school child and the tendency to respect neither him nor his culture that has built up in him the Pachuco attitude.

"Problem children are made in the early stages of school life." The importance of first school contacts is known to every educator. To insure a stable personality, the child must achieve a reasonable measure of success during the first days in school. He must feel secure; he must feel adequate to the tasks imposed upon him; he must feel that he belongs.

In trying to get at the reason for anti-social behavior on the part of Mexican young people one often elicits statements like the following:

"I never did feel at home in that school."

"I knew they didn't want me there."

"I was too ashamed of my English and too embarrassed to say anything."

"I felt they were all looking at me. They always stared at me and I felt that it was because of my color. The Americans like my sister because she is light, but not me. I'm dark and Americans don't like dark-skinned people."

"They laughed at me when I talked English because I mispronounced some of the words; so finally I got so I didn't dare open my mouth in school."

"We never get a square deal even in athletics. We are better players than the American boys and girls but the captain usually chooses the team and we get only the poorest positions."

"My parents want me to quit school. They say there is no use learning English or getting an education. You don't need either to pick lemons. Look at my dad. He can't speak English and he never went to school but he makes more money than the guys in the picking crew who finished high school."

These statements indicate some of the tensions under which most of our children of Mexican descent live constantly. Children making the transition from one culture to another almost inevitably undergo a period of disintegration. Roots, sunk in early childhood in the culture of the parents, are gradually, sometimes violently, torn up. The parents cling tenaciously to their speech and to their traditions. Their roots are anchored firmly in the culture of their forefathers; in that culture they feel "at home." Often parents resent having their children grow up to be different from them, especially if the children question their authority or assume airs of superiority toward them. The children, with no firm anchorage either in the culture of the Mexican parents or in the culture into which they have been born, are "at home" in neither. This applies to language as well as to other phases of life. It has been said that the Mexican-American child has a smattering of Spanish and a smattering of English but is "illiterate in both languages." He feels embarrassed and ill at ease in the presence of English-speaking people. He is equally embarrassed and ill at ease when speaking before people who have come recently from Mexico, for he realizes that he does not speak Spanish correctly.

In practically all phases of life he has built up feelings of inadequacy, of insecurity, of inferiority. His lack of success, and failure to get what he calls a square deal creates resentment, anger, hatred. When these feelings get over into overt action we become aware that something must be done to prevent the building up by the Mexican children of these negative attitudes. Here and there attempts are being made to discover effective means of preventing the growth of such attitudes and to change the social patterns of communities in such a manner as to assure better relationships between Spanish-speaking and English-speaking people.

Will the teaching of Spanish in the elementary school help to bring about better relationships. If so is it to be introduced as a regular part of the curriculum and taught to all children in the public schools or should

it be offered as an extra-curricular activity only to those who elect to take it? At what grade level should it be introduced? Should there be separate classes for those who speak Spanish in the home and are therefore able to do more advanced work than the English-speaking child?

These are questions to which the experts will ultimately have to determine the answers. At present, unfortunately, the experts disagree. It may be said, however, that in most instances in which an attempt has been made recently to teach Spanish in the elementary school, with the definite purpose in mind of using the teaching of the language as a means of improving Mexican-American relationships, the effort has produced positive results. The best results seem to have been achieved in those school systems which have been able to introduce the Spanish language as an integral part of the curriculum. If the social outcome is kept uppermost in mind the proper time to introduce the language is in the kindergarten. As to segregating children who speak Spanish in the home into separate classes, there is no more excuse for such segregation than there is at present for segregating Spanish-speaking children because they "hold the other children back." Grouping within classes for special help and also for advanced work is necessary but segregated classes or schools are both socially and psychologically indefensible.

Let us take the case of Pablo. Some years ago he entered a segregated "Mexican School" which was located across the street from the "American School." Young though he was he could not help noticing that his school was inferior to the one across the street. He had heard his older brothers and sisters complain because the "Americans" had better equipment in their school and on their playground. Later he began to wonder why he and his playmates were thought unworthy of attending the school across the street. His father told him it was because he was a Mexican. This puzzled him greatly because his teacher had told him that he was an American and that he must learn to speak English like other Americans if he wished to get along in this country. During his six years in the segregated school several of the teachers punished him for speaking Spanish on the school ground although his opportunity of learning to use English correctly was limited to the few sentences he exchanged with his teacher each day. Since it was only natural for him and his playmates to revert to the language he really knew how to use effectively; and since, in his own mind, there was no real incentive for speaking in English he felt very resentful of the punishment. More and more he came to dislike his teachers and the language they were trying so hard to impose upon him. He also learned to dislike the children in the school across the street, who spoke that language. He learned early what they meant when they called him names on the way home from school. He quickly acquired a battery of invectives in both Spanish and English and his free use of the same led to constant fighting and quarrelling with "those gringoes."

When he had finished the sixth grade Pablo was sent to a mixed school where he and his classmates were thrown into the company of the boys and girls across the street. They had built up, for six long years, a feeling of superiority toward the Mexican school and its occupants. Pablo and his companions drew apart from the others and played in groups where they talked only in Spanish. They usually had no equipment and since they all

liked to play ball they began taking balls away from "the Americans." So quarrels and fights were constantly occurring.

Pablo refused to take part in any work in the classroom which involved talking. When questioned as to the cause he replied that he was ashamed. He could not say the words right even when he knew them. Yes, he had prepared a report; he had written it out carefully. But he simply would not talk before "those Americans." On the rare occasions when he had tried it they had laughed at his mistakes in pronunciation or had remarked that they could not understand a word he said. One boy had asked him why he didn't talk in English so people could understand him.

Pablo withdrew more and more into his own little group. They formed a gang, bought zoot suits, and set out to "get even" with the society that had made them what they were.

Francisco, Pablo's youngest brother, started to kindergarten in a mixed school last year. Although his teacher knows very little Spanish she greeted him in his own language when he entered the room. He replied politely and was directed by an older child of Mexican origin to hang his cap in the cloak room. He was then shown about the room and the playground and told in simple Spanish what he should do.

Each day the teacher taught a few words of Spanish to all the children, and frequently she asked Francisco to say them so the English-speaking children would get the right pronunciation. She also encouraged the English-speaking children to help Francisco and the other Mexican children to learn the English words. The rapidity with which he did learn to speak English was quite astonishing to his teacher. At first she took the credit, but she soon discovered that it was not due her. Francisco and Billy had become such inseparable companions that they played together almost every afternoon. Billy had learned many more Spanish words than the other children. The teacher wisely concluded that children learn much more from one another than from a teacher. She wonders how any teacher can argue in favor of segregating Mexican children till they learn to speak English.

Recently Pablo, now in the army, came home on furlough. One of his first observations was, "Gosh, Francisco speaks better if not more English after one year than I learned all the time I was in school."

To summarize the advantages to the child of Mexican descent of our teaching Spanish in the elementary school:

1. The child enters school with the knowledge that, though his language is different, neither he nor his language is inferior.

2. Realizing that he has something of value to share with his classmates, he becomes eager to express himself and thus more eager to learn English.

3. He finds that he is superior in some things and inferior in others and that the same holds true of all the children. His problem of overcoming his lack of English is greatly simplified, for it is not complicated by emotional blockage.

4. The out-worn reason, or rather rationalization, for segregating Mexican children because of the language handicap is no longer admissible

So far the value of teaching Spanish has been considered only from the point of view of the Spanish-speaking child. What about the effects on the other children?

Many people believe that all children should learn a second language. No other single factor serves so well to break down the narrow, provincial, chauvanistic attitudes which characterize most Americans. How often teachers encounter the smug attitude, the false sense of superiority of the English-speaking child, especially when he compares himself to the Mexican child. The attempt to learn Spanish, if rightly directed, invariably engenders a greater respect for both the Spanish language and for the Mexican child. Those who think Spanish can be acquired in ten easy lessons because "those Mexicans talk it, don't they?" soon gain a more wholesome attitude. A second language broadens the English-speaking child's vision. Usually speaking the language of another people also creates a strong feeling of friendship for the people themselves.

Without doubt the best reason for introducing Spanish as the second language in the Southwest is the fact that so much depends, both at the moment and in the future, on understanding our neighbors to the south. Most of our travel for pleasure during the years immediately following the war will probably be in the Latin American countries. Because of the world-wide devastation few other places will be able to offer so much that is attractive. Already we have delayed so long the building up of good relations with our Latin neighbors that these contacts may produce further friction. In fact it is conceivable that we may, even yet, lose the fruits of victory on our own continent.

The teaching of Spanish in our schools has, in the past, done little to help the average child to understand or to appreciate the Spanish-speaking countries. The practice of introducing the study of the language at the adolescent age, after pupils have already acquired strong prejudices and when they are more self-conscious than at any other stage of growth, militates against the creation of better relationships. Since foreign languages are usually taught from the grammar approach pupils often dislike to study them and seldom acquire any conversational ability even after years of study. In most schools the opportunity of teaching Spanish as a living, dynamic, functional language has been neglected. We have made little use of the fact that person to person contacts are far more effective in learning a language than classroom teaching, no matter how good the teaching may be. The English-speaking child is entitled to learn Spanish early enough to avoid the waste of time and effort which usually attend the struggles of older pupils with a foreign language.

The mutual sharing of language experiences offers an acceptable and generally accepted common ground upon which more friendly feelings and greater understanding between Mexicans and Americans can be built. In schools where the practice of having a "language pal" has been tried, the experience has produced favorable results in mutual helpfulness in learning the languages; but the results in better attitudes on the part of all who participated greatly outweighed the language benefits.

The objection is often raised that the Spanish spoken by some of our local Mexicans is incorrect and therefore that our English-speaking children should not learn from them. Is the reverse not also true? This incident which took place in a Spanish-English class may illustrate the point.

Mike and Chet were "language pals." The teacher overheard Mike using an incorrect Spanish verb form. She said to him, "Please be very

careful, Mike, because you do not want to teach Chester the wrong word."

Chet said, "Nope, Mike, don't you learn me no bad Spanish."

Mike, his eyes twinkling, replied, "No, Chet, and don't you teach me any bad English either."

As a result of the work done in this same class Chet and some of his classmates asked for more lessons in English grammar and correct usage, lessons in which they had taken no interest until they realized their responsibility in using the correct form when working with their "language pal."

Of course the teaching of language alone will not solve all the problems of better Mexican-American relations. Neither will education alone. It is a problem in human engineering with ramifications in every phase of life. Its solution will require the combined efforts of all social agencies. But one must start somewhere and the teaching of language, both Spanish and English, if properly conducted, is perhaps the most hopeful single point of departure on the long, hard road to mutual understanding.